Exploring the processes used by experienced change agents to mitigate the impact of an emergency unplanned event in a planned operational change project.

By

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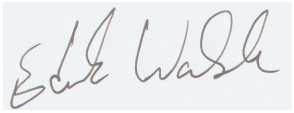
DECLARATION

The author hereby declares that, except where duly acknowledged, this thesis is entirely his own work.

This thesis is not one for which a degree has been or will be conferred by this or any other university or institution.

Signed: 

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ABSTRACT

This study explores the processes used by experienced change agents to mitigate the impact of an emergency unplanned event in a planned operational change project. The study concentrates on the change agents reflecting on the mitigation of the emergency unplanned events. This interpretative study employed a purposeful sampling strategy aligned with semi structured interviews to generate the data. A total of twenty nine experienced change agents were interviewed for this study. Furthermore, the data resulting from the interview process was supported by the reflections maintained throughout the study by the researcher. Data analysis revealed 80 per cent of the interviewees followed the five-step reaction model. Though this may give validity to the model developed, the experienced change agents were unaware of the steps in the model formally. The researcher confirms the linearity of the model during simple mitigation efforts. However, during complex mitigation efforts the researcher observed, though the data analysis, multiple interaction between process steps. Furthermore, these interaction are in the form of verifying that the mitigation effort is a success, or an alternative approach is required. The study unveils 71 activities as identified by the experienced change agents during their mitigation approach. Additionally, the researcher enhanced the findings by aligning the 71 identified activities with the reaction model steps and with the best practice alignment approach of Reijers and Mansar (2005). This alignment gives a greater understanding of the approaches used during the mitigation efforts. This new contextual approach, now grounded in participant data, is theoretical underpinned in process theory which uses theological and action learning assumptions.

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LIST OF ABBREVIATIONS

CA	Change Agent
CEO	Chief Executive Officer
EVP	Executive Vice President
IT	Information Technology
MD	Managing Director
Prosci's ADKAR steps	Awareness, Desire, Knowledge, Ability and Reinforcement
RACI	Responsible, Accountable, Consulted and Informed
RQ	Research Question
UAE	United Arab Emirates
UK	United Kingdom
USA	United States of America
VIP	Very Important Person
VP	Vice President
WIT	Waterford Institute of Technology

GLOSSARY OF TERMS

Change Agents	Is a person from inside or outside an organization who helps an organization, or part of an organization, to transform how it operates.
Change Model	A change model identifies potential areas of resistance and implementation strategies of designed to reduce or eliminate resistance before the change process starts.
Crisis and Emergency Events	Crisis and emergency events are those events which, due to their unexpectedness and uncontrollability, impact the normal operations of an organisation.
Experienced Change Agent Characteristics	For the purpose of this research an experienced change agents is considered to have managed a minimum of two change projects.
Five-Step Reaction Model	Is described as the full five step approach to resolution of the emergency unplanned event.
Mitigation effort	Is described as the actions identified to resolve the emergency unplanned event.
Mitigation Model	Is described as the full five step approach to resolution of the emergency unplanned event.
Nature of Planned Operational Change	Is described as the projects orientation, whether customer, process, automation, or cost focused.
On-the-job	Is described as the training that a person is given while doing a job and getting paid.
Organisational Characteristics	Organisational characteristics, such as industry, number of employees, local or international operations, and culture.
Project Planning	Is the establishment of the total scope of the effort, defines the objectives, and develops the course of action required to achieve the objectives of the project.
Rare and Unusual Events	These events are described as occurring infrequently.
Unplanned Events	Unplanned events are any event that can be considered as a deviation from the original project plan (Aaltonen *et al.,* 2010).

SECTION ONE:
RESEARCH OVERVIEW AND STUDY CONTEXT

INTRODUCTION

This research study asks the question: "What are the processes used by experienced change agents to mitigate the impact of an emergency unplanned event in a planned operational change project?" It focuses on the experience, of the change agents and how they mitigated the impact of an emergency unplanned event in their change project under discussion.

To guide the data collection process, based on prior research, mapping was used. An interpretative research philosophy was used to answer the research questions. The selected philosophy allowed the researcher to interpret the elements of the study and enabled the inclusion of the human dimension from the change agents' perspective. Denzin and Lincoln (2011) argue that an interpretative qualitative approach enables the researcher to derive meaning and relationships in order to formulate a better understanding of a process. An inductive process was used, aligned with a qualitative research approach. This strategy allowed for the collection and interpretation of data that was not readily quantifiable (Patton, 2015). The data collection phase of this study took place from August 2019 to January 2020 and involved interviewing 29 experienced change agents. The researcher used semi-structured interviews for data collection allowing for the flexibility and adaptability to changes in the field based on the researcher's learning and reflection. The data collected is analysed through manual coding in NVivo, thematically and finally through a second feedback from sample change agents on the conceptual model.

RESEARCH OVERVIEW

The researcher found, through his investigation of the relevant existing literature, the research topic of how experienced change agents mitigate emergency unplanned events in an operational change project has not been previously examined.

There is ample literature on change agents related to their roles, their type, and their skill sets (Osentoski 2016; Burnes 2004; Cope 2000; Tichy and Nisberg 1976). However, the contribution from this investigation is the collection of primary data from experienced change agents on how they mitigated emergency unplanned events in their operational change plans. The interviews with the change agents have provided considerable insight into their unique projects and experiences. The generation and analysis of this data delivered a unique understanding of the projects undertaken and the mitigation efforts

used by experienced change agents. Moreover, in selecting the experienced change agents the researcher used a purposeful sampling selection to choose interviewees from a variety of industries and educational backgrounds and with national and international experience. This approach allowed for access to a wider change agent population, thus providing an enhanced understanding of the approach to the emergency unplanned events and adding greater depth to the findings presented.

Change management is a key contributor in any change project. Varkey and Antonio (2009) compare three models, including Lewin's three stages of change (Lewin, 1947), Prosci's ADKAR steps, awareness, desire, knowledge, ability and reinforcement (Curtis, 2017), and Kotter's eight steps for change management (Kotter, 2007). Banks and Claire (2010) compare five change models, including Kotter's eight-step model for change management. Additionally, Appelbaum *et al*. (2011), Banks and Claire (2010), Raelin and Cataldo (2011) and Varkey and Antonio (2009) refer to Kotter's (2007) eight-step approach as the core process for implementing change management. The researcher incorporated Kotter's eight steps for change management for this research. Additionally, Kotter (2007) expounds on his eight-step model but elaborates on why the efforts of transformation can fail, discussing his observations on more than 100 companies since publishing his book *Leading Change*, in 1996. As with Kotter's (2007) observations, the researcher has compiled ample primary data from the experienced change agents on emergency unplanned events that occurred in their change projects. Additionally, this research not only identified the problem affecting the change project, but also identified the mitigation process used to resolve the emergency unplanned events. The researcher believes that this is a key contribution. Emblemsvåg (2014) conducted a study of more than 1,500 projects worldwide and analyses their success and failure rates. Additionally, Emblemsvåg states that the failure of many of the projects can be traced to poor project planning. However, Emblemsvåg (2014) in discussing the failure of change projects, goes no deeper than the project, final status. The contribution from the present study adds to the existing literature and identifies specifics in the area of project management, change management and crisis & emergency management. Through the data analysis process, the researcher has identified and discussed change project failure events, as well as identifying the process used by the experienced change agents in their mitigation efforts to resolve the emergency unplanned event that occurred.

Pangarkar (2016), Paraskevas and Altinay, (2013), Wang and Hutchins (2010), and Hutchins and Wang (2008) all use Pearson and Mitroff (1993) five-phase crisis model as the core model for their research. However, this investigation has adopted the models proposed by Pearson and Mitroff (1993) and Boisvert and Moore (2003) to conduct the investigation. Through the data analysis, the researcher has identified the mitigation processes used by experienced change agents when dealing with emergency unplanned events. Moreover, the researcher aligned the process used with the proposed model, resulting in the identification of their alignment. Additionally, the identified activities are recorded and aligned with the proposed model. This research adds new knowledge to the literature. Additionally, it aligns the chosen model as a current operational model used by experienced change agents when dealing with emergency unplanned events in operational change plans. Moreover, the identified activities provided an enhanced understanding of the approach taken by the change agents when dealing with emergency unplanned events.

ORIGINS OF THE RESEARCH STUDY

Change agents attempting to mitigate an emergency unplanned event in a change plan is a very common event. As an operational improvement consultant with 33 years of experience, the researcher has project- and programme-managed numerous change initiatives in which emergency unplanned events have occurred. In 2012, during a discussion with two work colleagues, the researcher realised that his academic qualifications were not in line with his work experience. He therefore embarked on a journey to upskill his qualifications, both professionally and academically. The researcher completed a Master of Business Administration in 2014 and then engaged in Continuing Professional Development (CPD) in order to keep abreast of current changes in operational improvement methodology. Undertaking a Doctorate in Business Administration (DBA) is a major decision and central to the decision-making process is the choosing of a topic. Having reflected on the topic, the researcher believed that it held sufficient interest to sustain the four years of study, was relevant to his professional practice, and made a difference in the industry. Furthermore, as an operations improvement consultant, he was very taken by the prospect of making an academic contribution and providing insight to change agents in their approach to mitigating an emergency unplanned event.

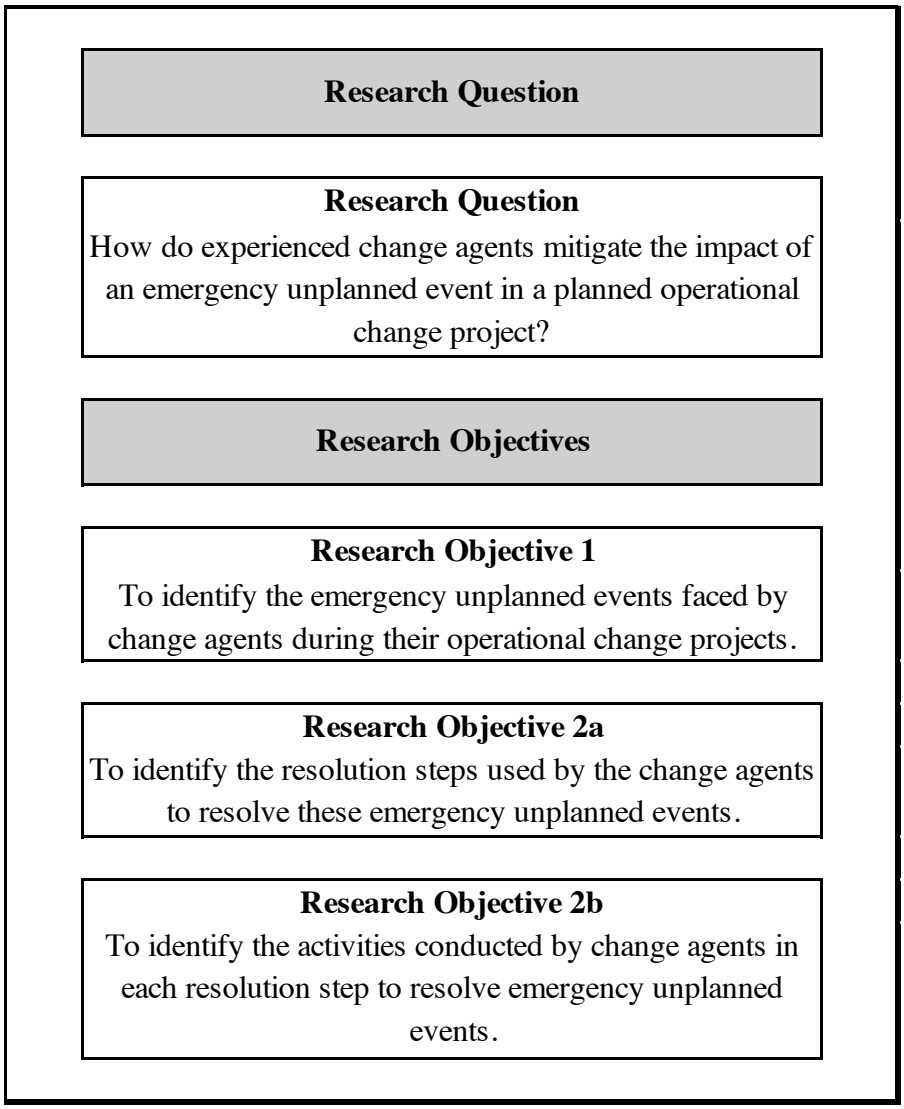
The researcher identifies three factors that bounded the change agents' approach to an operational change plan. Firstly, they should decide on the operational change initiative and develop a project plan to incorporate the project life cycle. The change agent requires an understanding of the project management approach. Maddalena (2012) describes project management as the process by which projects are defined, planned, monitored, controlled and delivered such that the agreed benefits are realised. Secondly, they should include within the change project plan a change management mechanism to ensure the successful completion to the project. Kotter's (2007) eight approaches to organisational change is widely referenced and is considered as the "go-to" model in approaching change management. Thirdly, with any change project, they should understand the stages in change management (Isabella, 1990). However, the three key components discussed are positive and do not discuss when a project fails due to unforeseen circumstances.

Kotter (2007) argues that many change projects performed by corporations fall short of their targets. The research identified this topic (where the project failed due to an emergency unplanned event) as an area of interest and further investigation. To enhance this research, the researcher investigated both emergency and crisis management theory to identify an appropriate mitigation model that identified the process used to mitigate the effects of an emergency unplanned event.

RESEARCH QUESTION AND OBJECTIVES

The primary objective of this study is to contribute to existing theory by answering the specific research questions. As previously stated, the researcher found, from his investigations into the research topic, that there was a lack of available literature specific to this topic. To facilitate this investigation, the researcher developed one research question.

Figure 1: Research Overview



The research question is "How do experienced change agents mitigate the impact of an emergency unplanned event in a planned operational change project?" Furthermore, the researcher developed the following three research objectives to deliver the answer to this research question: Research Objection 1: To identify the emergency unplanned events faced by change agents during their operational change projects; Research Objective 2a: To identify the resolution steps used by the change agents to resolve these emergency unplanned events; and Research Objective 2b: To identify the activities conducted by change agents in each resolution step to resolve emergency unplanned events. The three research objectives guided the researcher in developing the semi-structured interview guide, to facilitate the flow of the interviewing of the experienced change agents and to gain greater insight into how the change agents mitigated the effects of the emergency unplanned events they experienced. Through the guidance of the research question and

objectives, the researcher gained insight into the phenomenon and provided a data rich return, as discussed in Paper 4.

OVERVIEW OF THE RESEARCH PROCESS

This study engaged in a number of stages in pursuit of the research question and objectives (see, figure 1). The researcher outlines the stages as:

Stage 1: Agree research question and objectives. This involved drafting of the research question, reflection on the question proposed and redrafting. The final research question was achieved through many iterations and consultations with the researcher's supervisor. Once the research question was agreed, the researcher proceeded to develop the research objectives to investigate the research question.

Stage 2: Agree the philosophical position for this study. On reflection on the proposed study the researcher adapted an interpretive research philosophy to answer the research question and to deliver the research objectives. The selected philosophy allows the researcher to interpret the elements of the study and enables the inclusion of the human dimension (Prasad and Prasad, 2002). Thanh and Thanh (2015) suggest that interpretivists will view the world through the researched subject's eyes and will choose those who have their own interpretation of reality, to cover all viewpoints. Creswell (2009) identifies that interpretivist researcher observe reality through the research subject's own background and experiences. Interpretative researcher predominantly use qualitative research methods (Patton, 2015). In selecting this philosophy, the researcher was able to interpret the elements of the study and include the human dimension (Prasad and Prasad, 2002). The researcher used an inductive process, aligned with a qualitative research approach.

Stage 3: Design the data collection and the data analysis processes. For the purpose of this study, the researcher identified semi-structured interviews as the data collection method that best matches his requirements and which enabled him to achieve the research objectives. Collins and Hussey (2014) perceive qualitative interviewing as a component of ethnography, in which the investigator makes a prolonged observation of the phenomena in its natural set-up for some time, while trying to be part of the environment and culture. For the purposes of this study, the researcher conducted 29 interviews as this sample size obtained adequate data saturation. The researcher followed the guidance of Patton (2015), who suggests using a purposeful sampling strategy, and selected the

interviewees in line with their years of experience, their experience in change projects, and their skill sets. Therefore, as the experienced change agent is described as a professional with ten years of work experience and has managed a minimum of five operational change projects, the purposeful sampling strategy is aligned with criterion sampling (Patton, 1990).

NVivo was identified and used as the appropriate qualitative data analysis software tool (Hoover and Koerber, 2011). The researcher identified that a data-driven approach would be used in analysing and interpreting the data. It was deemed that Sarantakos' (1998) five-step approach best suited the research study. The researcher prepared the interview procedure taking into consideration the proposed interview environment. Flick (1998) suggests the researcher should start with the scheduling of the interview. Furthermore, scheduling is one of the biggest challenges faced by interviewers, because it involves the integration of time schedules both of the interviewer and the interviewee. The researcher identified their target list of potential interviewees. A semi-structured interview guide was prepared which was aligned with the research questions and objectives. The interview guide is a checklist used by the researcher during the interview, to ensure that relevant data is collected and that the conversation does not go off on a tangent (Patton, 2015). Creswell (2016) adds that an interview guide ensures that the researcher has used the available time for the interview to the best purpose.

Stage 4: Assessing the effectiveness of the data collection and analysis process. The researcher identified five experienced change agents to facilitate the effectiveness of the data collection process. The researcher piloted the interview procedure including the semi-structured interview guide and assessing the effects of the interview environment. The five interviews were voice recorded and transcribed. The researcher followed the Sarantakos's (1998) five-step approach specifically for qualitative interview data analysis. This research study adopts the five-phase emergency and crisis reaction model of trigger/signal identification, mitigation effort, response, recovery and learning (Boisvert and Moore, 2003; Pearson and Mitroff, 1993). Moreover, the interview guide for the semi-structured interview was adapted, to include the five-phase emergency and crisis reaction model's themes. This approach enabled the researcher to align the themes and codes during the analysis of the data. This approach proved effective with minor changes and was deemed appropriate for this research. The researcher notes, the approach is not purely inductive in nature, while the themes come from the literature and inform

the study, they were used as loosely held guiding principles as opposed to absolute categories. This recognises that the study exists on the continuum between induction and deduction, while more in the direction of induction.

Stage 5: Data collection process. The researcher followed the same methodology as discussed in stage 4 for the data collection process. An additional 24 interviews were performed, all interviews followed the same interview procedure as outlined in stage 4. On reflection, the researcher agrees with Flick (1998), stating the scheduling of the interviews was one of the biggest challenges faced by the researcher. The data collection process revealed a data rich return enabling the researcher to engage in the data analysis phase with confidence in answering the research question.

Stage 6: Data analysis process. The researcher followed the same methodology as discussed in stage 4 for the data analysis process. The process of manual coding and the alignment of the codes with the five-phase emergency and crisis reaction model proved to be a contributor to the speed of analysis. Once the manual coding was completed the data was uploaded into NVivo for deeper analysis of the data. The researcher transferred the generated data table from NVivo into excel to give greater flexibility in data analysis.

Stage 7: Present findings. The findings from this research is presented in paper 4. The presentation of the findings is aligned with the conceptual framework as presented in paper 1 and is positioned to answer the research question.

Stage 8: Feedback of the research findings. The experienced change agents were engaged a second time to reflect on the findings from this research. During the interview process the researcher asked the experienced change agents if they could be contacted a second time and all agreed. The researcher developed a questionnaire requesting the experienced change agents feedback on the revisited conceptual framework and the resolution steps and activity matrix developed from this research study.

Stage 9: Discussion on thesis findings. The findings are discussed in section 3 Discussion, Conclusion and Recommendations. Section 3 also outlines the second engagement with the experienced change agents and their responses. Additionally, this section also discusses the findings relative to the theoretical model, a conclusion is developed and recommendations are made.

THESIS STRUCTURE

This thesis consists of four sections and is structured as follows:

Section One: Research Overview and Study Context, provides an introduction to the research study aims and its objectives. It also provides an overview of the origins of the research study and outlines the research question and objectives to be delivered. An overview of the research process and the thesis structure are presented.

Section Two: The Cumulative Paper Series provides a bound copy of the four papers produced and examined during the Doctorate in Business Administration (DBA) programme;

1. Paper 1 looks at the problem statement as presented by the researcher. The initial research questions are presented and discussed. A review of the themes and theories, discussing the literature available on each and outlining how they can be used in the development of this research study. The conceptual framework for this research investigation is presented and discussed.

2. Paper 2 discusses the chosen research method and outlines this research's philosophy. The researcher adopts an interpretative research philosophy and identifies semi-structured interviews and the data collection method. The research approach and design are outlined. The interview technique and procedure is discussed and developed. The researcher discusses and identifies the research sample size. Additionally, the researcher discusses the limitations of qualitative interviewing. The data analysis methodology is discussed and identified. Furthermore, the researcher discusses the research reliability and validity. In addition, the ethical considerations are identified and discussed.

3. Paper 3 presents the pilot research findings.

4. Paper 4 presents the phase two data collection methodology and the research findings. The data presented is aligned with the change project characterises and the five step reaction model. Observation are made on the original conceptual framework and the conceptual framework is revisited and redrafted.

These papers were assessed at agreed intervals by the DBA examiners and each was recommended by the examination panel, based on an acceptable standard being reached. The papers document the evolution of this research study while the preface prior to each paper offers reader insight into the evolution of this research study and the application of reviewer recommendations at each juncture.

Section Three: Discussion, Conclusion and Recommendations, provides the detail of the findings from the research. It looks at the key insights from the research study as well as the refinement of the conceptual framework based on these findings and in interaction with the reviewed literature. Additionally, it discusses the feedback on the revisited conceptual framework and the resolution steps and activity matrix with the experienced change agents. It makes recommendations on the usage of the revisited conceptual framework and the resolution steps and activity matrix as a tool to be used by experienced change agents during their mitigation efforts. In addition, it adds to the existing body of knowledge by providing insights into the working of the five step reaction model as discussed and identified in the reviewed literature.

Section Four: Research Log extracts. In keeping with the ethos of reflective practice, I maintained a reflective log throughout the research recording my thoughts and reactions to events as they occur. I have used my research log as a means to express and documenting the changes in directional thinking which evolved throughout the research period. The writing of the cumulative paper series was a reflective process in itself and extracts from my reflective diary are displayed within each of the prefaces and the papers in the cumulative paper series as well as within section four (reflective log extracts) as I consider these as pivotal points in the choices I made. Each offers insight into my theoretical exploration and my evolution as a practitioner- researcher during this research journey.

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SECTION TWO:
CUMULATIVE PAPER SERIES

PAPER 1

Examined on the 27th April 2018

PREFACE

Conceptual Paper 1 was submitted on 20 October 2018 as the first paper in the Doctorate Colloquium series. In this paper, the researcher sets out the context for the research in exploring the processes used by experienced change agents to mitigate the impact of an emergency unplanned event in a planned operational change project. The paper reviews the background literature identified for the research and presents the research question and objectives. Additionally, it discusses the development of the conceptual framework and rationale in its development to deliver the research question.

Paper 1 was presented to the examiners, who recommended it with corrections. They also included several comments, which entailed ample review and rewriting. The researcher identifies that the period between the presentation of paper to the examiners up to its acceptance was the greatest learning experience of the doctoral journey. This learning experience was required to address the comments of the examiners. The section below highlights – from the researcher's perspective – the three main comments from the examiners that had to be resolved.

1. Outlining the Research Problem

> An attempt is made to identify the broad research problem. However, the explanation of the underpinning theories needs to be more coherent and the establishment of a clear expected linkage between them.

The research problem was redefined and is discussed in Section 1.2. The researcher proposed the use of a crisis management model as a guide, to enable him to explore how change agents mitigate the impact of an emergency unplanned event in a planned operational change project. All the underpinning theories are discussed in Section 2.0. Within this section, the researcher included the following themes: review change management; teleological process theory; action learning theory; planned operational change; the change agent; unplanned events in a change plan; managing emergency unplanned events; and crisis and emergency management. All these themes were required to facilitate an understanding of the research question and the development of the research.

2. Writing & Argument and Logical Structure

> My sense is that this is more of a first draft – given the number of syntax errors and poorly constructed sentences, it is difficult to believe that this paper was proof-read to any great extent. The structure is poor in places and the thought process is a bit muddled.

The researcher completely rewrote, restructured, and edited the entire paper. During the rewriting of the paper, care was given to include better signposting, and coherent arguments/train of thought were included in all relevant sections, especially Sections 1.0 and 2.0.

3. Rationale and Justification

> There is no separate section on this however it is alluded to throughout the paper. A separate section on context of the research would help in the framing of the proposed study. A greater justification on the importance of the topic, the appropriateness of the conceptual framework, etc. is needed.

The researcher thanked the examiners for their suggestions, all of which were applied to the work. The rationale and justification of the thesis was redefined and then discussed in the following sections: 1.2 (Problem Statement); 1.3 (Research Question); and 3.0 (Proposed Conceptual Framework). Section 3 aligned the research question to the research objectives and outlined the approach in the conceptual framework.

Rewriting Paper 1 and its many revisions instilled in the researcher an understanding of the requirements both from a level 10 academic writing aspect and from an improved understanding of what was required to prepare a doctoral-level thesis.

In completing the Conceptual Paper, the researcher established the foundation for this research. The main theories discussed in Paper 1 and integrated in the developed conceptual framework are: 1) The Change Agent. Change agents are described as individuals responsible for organising, facilitating. and directing the change in an organisation (Burnes, 2004). The agents are therefore tasked with the role of continually checking on the progress of the project and establishing any shortcomings that need to be addressed, to ensure that the change project is on course (Cope, 2000). The literature outlines the importance of the change agent in a change project. 2) Planning a Change Event. Kotter (1996) states that all companies going through change need to have a systematic approach to the change process. Maddalena (2012, p.84) states, "Projects bring about change and project management is recognised as the most efficient way of

managing such change." Paper 1 develops the integral linkage between change management and project management where one is synonymous with the other. 3) Managing Emergency Unplanned Events. Boisvert and Moore (2003) suggests that two separate processes are not required and combines crisis and emergency processes into one simple process. Combining Pearson and Mitroff (1993), and Boisvert and Moore (2003) was key to developing the mitigation model for this research.

The theories identified and discussed in Paper 1, aided by the constructive feedback from the examiners, guided the researcher in developing the final paper and the final conceptual framework. Moreover, the conceptual framework guided the researcher in his development of Paper 3, as it formed the foundation for the data to be obtained through the interaction with experienced change agents. The key data gathered were: the organisational characteristics; experienced change agents' characteristics; the nature of the operational change; the emergency unplanned event; and the alignment of the change agents' action in their mitigation efforts, with the identified mitigation model.

Viva Examiners' Comment:

What are some of the limitations of the Kotter framework mentioned in the extant literature? Please introduce these briefly.

The researcher identifies that although Kotter (2007) eight step approach is used for the purposed of this research it is not without its limitations. Busse and Doganer (2017) discuss Kotter (2007) eight step approach to change management, where Kotter suggests firms should follow each step consecutively in order to successfully implement change. However, Busse and Doganer (2017) state the eight-step process does not provide any details of accomplishing targeted visions. Even the sense of urgency cannot be provided without involving the affected people in creating these visions or implementation plans (De Graaff and Kolmos, 2007). Calegari et al. (2015) state the model yields an outstanding strategic perspective and it obviously focusses on behavioural aspects of change. However, they argue that the model does not really provide an approach for employee engagement and thus does not state how to effectively convince employees to follow the change.

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Paper 1: Conceptual Framework

ABSTRACT

Within all operational change projects unplanned events that cannot be predicted occur on a regular basis. These events, and their aftermath, can significantly impact an organisation's products, services, financial bottom-line, reputation, and employees (George Washington University, 2010). This research will focus on change agents and their dealings with emergency unplanned events in change projects, and how they mitigate the unplanned emergency event's impact. The change agents are embedded within the change approach and are involved in the day-to-day project activities. Change agents are an untapped source of knowledge and are the primary participants of the proposed research. A conceptual framework and three key research objectives have been developed to enable the exploration of the research question. To investigate the research question, the researcher has incorporated crisis and emergency management models, selecting a combined model from Boisvert and Moore (2003) and Pearson and Mitroff (1993) and suggests a similar five-step approach for the purpose of the research. The five steps to be studied are signal/trigger identification, mitigation effort identification, response, recovery, and learning. This model will be used to identify and outline the approaches taken by experienced change agents in the mitigation process, as adopted in their own practice.

1.0 Introduction

1.1 Background

Operational change projects are a common feature of almost all sectors and industries that wish to remain competitive in a vastly changing business world. The rapid growth of globalisation and advances in technology have led to various industries seeking ways to take advantage of new forms of access to information, technology, and financial services. Piperca and Floricel (2012) argue that while almost all project management teams are meticulous in their planning, to avoid unplanned occurrences, it is almost impossible to complete a major operational project change without the occurrence of any unexpected events. Indeed, unplanned events occur in all projects and some on a daily basis. These unplanned occurrences, depending on their overall project impact, could be categorised as emergency unplanned events, and those events that occur infrequently may be classified as rare and unusual events. Most project management teams will have contingency plans to deal with the occurrence of emergencies. However, according to Abma (2000), in some situations, they may need to adopt a completely different process if such emergencies are to be appropriately addressed. The responsibility of choosing the most effective mitigation process to minimise the impact of the unplanned events rests on the change agent in charge of the change project. Beck and Plowman (2009) argue that when rare and unusual events occur, the organisation should involve their employees in the events as they unfold and thereby facilitate the development of the organisation through these learning experiences. The focus of this thesis is how these emergency unplanned events occur and the process used by the change agent to mitigate the impact of the event in order to deliver the project goals. The researcher will be focusing on change management, with the underlining theories being teleology process theory and action learning theory.

As mentioned above, the change agents and the entire project team are tasked with finding solutions to unplanned project events. Emergency occurrences have adverse effects not only on an organisation's reputation but also on its financial position, the goods and services it offers, and its human capital (George Washington University, 2010). Scholars have proposed various approaches towards the management of emergencies and crises during the implementation of an operational change project. For instance, Mitroff *et al.* (2006) argue that while crisis management activities require a high level of intervention, the actions taken can be aligned to those pursued when dealing with the management of

emergencies. A similar perspective is held by the Boisvert and Moore (2003), which contends that emergencies and crises have comparable characteristics in terms of how they are managed, including the requirement to be proactive, and at times coordinate vast operational efforts and communication.

1.2 Problem Statement

Various models for crisis and emergency management have been proposed. Among the most notable are Coomb's (2014) four-stage model, and Fink's (1986) three-stage model. Pearson and Mitroff (1993) propose a five-phase crisis management model similar to that proposed by Boisvert and Moore (2003), both which focus on the recovery process. Paraskevas and Altinay (2013) and Wang and Hutchins (2010) both use Pearson and Mitroff's five-phase crisis model as the core model for their research, in which they review major events. However, there is a lack of research on how these models might apply to an emergency unplanned event in a change plan from a change agent's perspective. For this reason, the researcher proposes the use of a crisis management model as a guide to explore how change agents mitigate the impact of an emergency unplanned event in a planned operational change project.

1.3 Research Question

The proposed crisis management model is used as a framework for collecting data to develop a best practice model to address the question: "How do experienced change agents mitigate the impact of an emergency unplanned event in a planned operational change project?" The research question is answered systematically, commencing with a literature review in the Section 2. Within this section, the researcher reviews change management, teleological process theory, action learning theory, planned change events, the change agent, unplanned events in a change plan, managing emergency unplanned events, and proposed crisis and emergency management model. Section 3 outlines the conceptual framework to be used. Section 4 outlines the research philosophy and methodology adopted by the study. Section 5 outlines the researcher's next steps towards the methodology and research design. Finally, Section 6 is the conclusion, which draws together the material in this conceptual paper and outlines the approach for the methodology/design paper.

2.0 Theory Building

The research question is as follows: "How do experienced change agents mitigate the impact of an emergency unplanned event in a planned operational change project?" This can be addressed by discussing a number of different characteristic themes and theories, namely, change management, teleological process theory, action learning theory, planning operational change, change agents, unplanned events in a change plan, managing emergency unplanned events, and proposed crisis and emergency management models. This section provides a review of these themes and theories, discussing the literature available on each and outlining how they can be used in the development of this research study.

2.1 Change Management

Appelbaum *et al.* (2011) and Agboola and Salawu (2011) define change management as the controlling of the transition of an organisation from the known to the unknown. Westover (2010) further explains the concept of change by mentioning that it is permanent. According to Agboola and Salawu (2011), the success of a change management journey depends on the implementer's awareness of the different aspects of the change process, the reactions of those involved in the process, and the best model for approaching the change journey. The most accepted view is that change is triggered in an organisation's environment by events such as a shortfall in corporate performance, a crisis, a change in customer demand, and technology changes, as explicated by Appelbaum *et al.* (2011), Agboola and Salawu (2011), and Salawu (2010). The change agent is the individual responsible for organising, facilitating and directing the change in an organisation (Burns, 2004).

2.1.1 Stages of Change Management

The four stages of the process of change have been identified by Isabella (1990), Appelbaum *et al.* (2011), Plowman *et al.* (2007), and Erwin and Garmin (2010). They consist of anticipation, confirmation, culmination, and aftermath. Anticipation is the reaction to fragments of information about the change event being proposed, while confirmation is the realisation that the change will happen and the potential implications for the organisation. Plowman *et al.* (2007) further explain that culmination involves the assessing of the reported change and after-change data. Isabella (1990) clarifies that aftermath involves the evaluation of the change process in terms of organisational effects and consequences. Tichy (2004) explains that there are three categories of factors that exert pressure during the process of organisational change, namely, technical, political,

and social factors. Tichy (2004) further clarifies that technical factors are the changes being made through technological advancements or economic conditions, while political factors are those being made by the impact of power, the allocation of resources, and those who influence the change. While Tichy (2004) explains that cultural factors are changes related to the values or beliefs of people, this does not explain the relation of the three factors, and how they interact to bring change to an organisation.

According to Westover (2010) and Lewin (1947), if groups have experienced rapid change, there is a tendency for performances to drop, which should be considered as the stabilising effort as part of the change process. Jaffe *et al.* (1994) and Isabella (1990) claim that the change model is composed of four organisational reactions to the changes. The first is denial – refusing that the change will actually happen. The second is resistance – refusing to be (or avoiding being) part of the change process. The third is exploration – experimenting with the new change process. The fourth is commitment, acceptance – embracing organisational change. The arguments of Jaffe *et al.* (1994) and Isabella (1990) are supported by Appelbaum *et al.* (2011), Erwin and Garmin (2010) and Plowman *et al.* (2007).

2.1.2 Change Model

There are many change models available, both simple and complex. Model comparisons may serve as a guide for organisations, helping them to choose the model that best suits their approach. For instance, Cummings (2015) aligns six different models to Lewin's three stages of change model (Lewin, 1947). Cummings argues that Lewin's model is a foundation for the six models. Lewin's model is composed of three stages: freeze, change, and unfreeze (Lewin, 1947). Varkey and Antonio (2009) compare the three models, including Lewin's three stages of change, Prosci's ADKAR steps (awareness, desire, knowledge, ability and reinforcement) (Curtis, 2017), and Kotter's eight steps for change management (Kotter, 2015). Varkey and Antonio (2010) suggest that using any of these three strategies increases the odds of successful implementation of a change project. Furthermore, they highlight Kotter (2015) eight-step model for change management as being "widely used in the business sector and is a comprehensive series of steps that focuses on people and their feelings towards change" (Varkey and Antonio, 2010, p.268). Banks and Claire (2010) compare five change models, including Kotter's eight-step model for change management. They further suggest that Kotter's model should be used by organisations for the successful improvement of projects. Appelbaum *et al.* (2011),

Banks and Claire (2010), and Raelin and Cataldo (2011) refer to the eight steps shown in Table 1 as the core process for implementing change management.

Table 1: Eight approaches to organisational change

Steps	Approach
1	*Establish a sense of urgency*
2	*Form a powerful guiding coalition*
3	*Create a vision*
4	*Communicate the vision*
5	*Empower others to act on a vision*
6	*Plan for and create short term wins*
7	*Consolidate improvements and produce still more change*
8	*Institutionalise new approaches*

Source: Adapted from Kotter (2007)

Kotter (1996) states that all companies going through change need to have a systematic approach to the change process. He outlines the eight-step process to achieve a successful programme and dedicates a chapter in his book to each of the eight change steps. In conjunction with giving the eight-step approach, Kotter (1996) also identifies pitfalls to be avoided to achieve the change. Kotter (2007) expounds on his eight-step model but elaborates on why the efforts of transformation do fail, discussing his observations on more than 100 companies since publishing his book *Leading Change*, in 1996. As he observes,

> "A number of these corporations' change efforts have been very successful. A few have been utter failures. Most fall somewhere in between, with a distinct tilt towards the lower end of the scale" (Kotter, 2007, p.31).

Kotter's eight-step model can therefore be considered a perfect structure for the implementation of change management, since it explains a systematic way to achieve an efficient administration system.

2.2 Teleological Process Theory

In all change projects an end goal is specified, and the objective of the change agent is to achieve and deliver this goal. The section below discusses teleological process theory and how it fits the objectives of this research.

Poole and Van de Ven (2004) describe teleology process theory as the change of purposeful cooperation, where like-minded individuals or groups act as a single purposeful and adaptive entity. A singe goal is envisaged, and plans are made with tasks aligned to reach the goal (Van de Ven, 2007). According to Poole and Van de Ven (2004) and Poole *et al.* (2000), prerequisites for achieving the desired goal can be defined by steps, activities, achievements, or a list of a possible sequence of events. To achieve the overall goal, the sequence of events is structured in the following prescribed order: goal formulation, implementation, evaluation, and modification (Juntunen, 2014). Juntunen further states that each action sets the stage for the next and contributes to the final goal. In change project, goals are set, and implementation plans to achieve those goals are agreed and initiated. If an unplanned interruption to the implementation plan is experienced, then the like-minded individuals or groups act as a single purposeful and adaptive entity to resolve the unplanned interruption and realign the implementation plan to achieve the goals (Poole and Van de Ven, 2004). The current research investigates the occurrence of unplanned events in a change plan and examine how experienced change agents mitigate this unplanned event to achieve the project goals.

2.3 Action Learning Theory

Weinstein (1990) outlines as the name indicated, action learning is learning through action and continually reflecting on the actions undertaken. De Loo (2002) describes action learning as centred around a problem solving group discussion of four to eight people whom work on their own or other group's problems using a set of predefined rules. A key deliverable in the proposed research is the demonstration of how change agents mitigate the impact of an emergency unplanned event in a planned operational change project. The mitigation processes used by change agents are developed through action learning and are key to the proposed research. This section discusses action learning and describes its benefits to organisations.

Chenchall and Chermack (2010) and Martineau and Hannum (2004) describe action learning as a collaborative process, whereby participants are exposed to real problems with learning support and develop workable solutions while learning from their experience. Organisations adopt action learning as a human resource development initiative used in training management development, organisation development, transformation learning, and team building (Chenchall and Chermack, 2010; Dilworth, 1998). Boaden (2006) states that action learning is the most widely used instructive method in management development in both the private and public sectors. The growth

in popularity of action learning is attributed to the concept of participants learning best when exposed to real issues where new behaviours and problem-solving skills are developed (Chenhall and Chermack, 2010; Bowerman, 2003). In line with Chenhall and Chermack (2010), the proposed research will investigate the action learning experienced by change agents when exposed to unplanned events in a change plan. The learning will be gained during the identification, investigation and resolution of the unplanned event, in order to mitigate its effect on the change plan. These learning experiences will be captured during the data gathering phase of this research with the experienced change agents.

2.4 Planning Change Events

There is ample research that can be used to guide change agents and managers when planning and implementing change events to achieve the set goals of the change (Brisson-Banks, 2009; Buono and Subbiah, 2014: Emblemsvåg, 2014; Callahan and Brooks, 2004; Caldwell, 2003). This section analyses an empirical review of the available literature on the best practices in project management, as well as the scope of the core activities as applied to the implementation of change projects. The section further highlights the criteria that are used for the successful implementation of projects, to ensure the realisation of the change project goals.

2.4.1 Project Management

According to Maddalena (2012, p. 84), as cited by the Association for Project Management (2018), project management can be described as

> "the process by which projects are defined, planned, monitored, controlled and delivered such that the agreed benefits are realised. Projects are unique, transient endeavours undertaken to achieve a desired outcome. Projects bring about change and project management is recognised as the most efficient way of managing such change."

In the research, after assessing the project management methodology from four different authors, Maddalena (2012) compiled a six-step management approach. Similar steps in project management were identified in the work of Horine (2009), Callahan and Brooks (2004), Kemp (2004) and Heerkens (2002). According to these authors, the steps involved in managing projects are as follows: stage 1 is a preliminary examination; stage 2 is the assembling of the right team; stage 3 is the creation of an accounting framework; stage 4 is the determining of the probable life cycle of the project; stage 5 is the process of implementation and monitoring; and stage 6 is the post project follow up. The authors are

also in agreement that effective management, throughout all its phases of planning and execution, is a critical component for the successful completion of the change project.

2.4.2 Criteria for Successful Project Management

Müller and Turner (2007) contend that a successful project management approach can only be achieved if the project sponsors agree on the project success criteria, after which they should reach a consensus on the factors that will define success. One such significant factor is the choice of a project manager. Müller and Turner (2007) suggest that when selecting a project manager, the sponsor should be assured that the candidate will focus on the settled success criteria, in addition to possessing the relevant skills to execute and manage the success factors. While the success factors may differ from project to project, Turner *et al.* (2008) provide a list of seven considerations that are critical in measuring the success of a project: budget, schedule, quality standards, specification, acceptance by the users, acceptance by the stakeholders, and acceptance by the project team. Müller and Turner (2007) include additional factors, such as customer satisfaction, supplier satisfaction, and reoccurring business. The success of a project may be measured by choosing any one criterion and in any combination of the various considerations.

2.4.3 Project Planning

Project planning is a critical aspect of project management. Emblemsvåg (2014) performed a study of more than 1,500 projects worldwide and established that about 41 per cent of the projects met their initial goals; 44 per cent were not completed in time, did not meet the budget allocations, or were not of the desired quality; and about 15 per cent were either stopped or missed the goals. The failures of many of the projects can be traced to poor project planning. Allen *et al.* (2015) argue that project planning is essential, as it ensures the effectiveness of the various processes, eliminates or reduces uncertainty, helps the team and stakeholders in understanding the project objectives, and provides a basis for controlling and monitoring. Emblemsvåg (2014) discusses some of the considerations that ought to be taken into account when planning for a project: having a project team to create the plan, and ensuring the team is closest to the processes being affected by the plan, are two crucial factors to bear in mind. Both Allen *et al.* (2015) and Project Management Institute (2013) discuss the planning process group as a key contributor to project management and project planning. Moreover his team, establishes the total scope of the effort, defines the objectives (or redefines them where necessary), and develops the course of action required to achieve the objectives (Allen *et al.,* 2015).

There is a strong linkage between change management and project management approaches in the extant literature. Appelbaum *et al.* (2011), Banks and Claire (2010), and Raelin and Cataldo (2011) assertion is that Kotter's eight steps approach is the core process for implementing change management successfully in organisations. Maddalena (2012) in his research assessed the project management methodology of four authors (Callahan and Brooks, 2004; Heerkens, 2002, Horine, 2005; Kemp, 2004) and concluded that all have a similar framework for project management and compiles a six-step project management approach. These five authors are also in agreement that effective management, throughout all its phases of planning and execution, is a critical component for the successful completion of the change project. As before, Maddalena (2012, p.84) states, "Projects bring about change and project management is recognised as the most efficient way of managing such change." Hornstein (2015) agrees and states, change and project management are complementary and mutually supportive disciplines that contribute to the successful implementation of a wide variety of projects. Project success is now recognised to be multi-dimensional; not only does it utilize the traditional aspects of project performance, but it also extends into associated fields such as organizational change management (Crawford *et al*., 2014).

2.5 Change Agents

Change agents form a crucial component of any change project undertaking. As mentioned above, during the performance of a planned change event, unexpected events happen on a regular basis. The unplanned occurrences are resolved by the change agents, as part of their roles and responsibilities in the project team. The agents are therefore tasked with the role of continually checking on the progress of the project and establishing any shortcomings that need to be addressed, to ensure the change project is on course (Cope, 2000). This section discusses the roles and attributes required of the change agents to effectively perform their duties during the change project. According to Mayer and Stensaker (2006), change agents are essential contributors to the day-to-day running of the change project and, as such, they ought to be aware of all project details, should be in contact with the stakeholders, and help in the transition process required to implement the change. Having highlighted the significance of the change agents towards the change project, the researcher considers that their change project knowledge and experiences is critical to the successful completion of projects.

2.5.1 Role of Experienced Change Agents

Burnes (2004) defines change agents as the individuals responsible for organising, facilitating and directing the change in an organisation. Buchanan and Badham (1999) loosely define change agents as managers who wants to change an organisation's role, structures, outputs, processes, systems, technology or other resources. While the Buchanan and Badham (1999) definition does cover the scope of change agents, the researcher does not believe that this role is confined to management. Indeed, there could be many people involved in the change project, and the function could be given to individuals from outside the organisation. As such, a more inclusive definition of change agents is individuals with the responsibility of organising, facilitating, and directing change in an institution's roles, structure, outputs, systems, processes, and technologies among other resources. According Burnes (2004) and Buchanan and Badham (1999), experienced change agents are those who have accumulated relevant knowledge and expertise by undertaking several change projects, some which may have failed. Experienced change agents are capable of readily identifying areas that need to be changed and the aspects that need to remain and forecasting the challenges that will be met during the planning and execution of the change project.

Child and Smith (1987) suggest the use of champions as change agents, by promoting key personnel in an organisation and empowering those willing to promote change. While the assessment by Child and Smith is valid, it is critical to note that rewarding an employee with the role of a change agent should not be based solely on their willingness to assist in the change projects. On the contrary, as proposed by Cope (2000) and Osentoski (2016), change agents should demonstrate that they possess the key skills required for individuals in the position: observation, listening, negotiation, facilitation, influencing, decision-making, reflection, and coaching. Besides these skills, Doyle (2001) identifies some of the characteristics that project sponsors should be looking out for when searching for change agent, and includes in the list: change skills, the motivational reasons for the individual in taking the change initiative, the appropriateness of the change agent, personal pressure on the individual to undertake the change project, and the volume of the change projects being deployed.

According to Tichy and Nisberg (1976), as cited in Osentoski (2015, p. 45), "Change agents are ultimately guided by what they attend to during diagnosis. In all cases, the change agent is guided in his work by his particular set of assumptions and beliefs,

although in many cases these are implicit and hidden." Tichy and Nisberg (1976) identify four different types of change agents, derived from the organisational diagnostic completed prior to the change, and the approaches used by the change agents. The first type is the "outside pressure type" of change agent, who is primary focused on changing the organisation (the social system) due to external factors. The outside pressure change agent is primarily perceptive, pragmatic and almost always gets the job done. The second type is the people change "technology type", who is concerned with the work people do, how to improve their performance, and the view workers have about their job. These are classified as the "feelers" – they are loyal and relate to situations by means of their emotional experience. The third type is the "analysis change agent", whose focus is on increasing the effectiveness of an organisation by the introduction of new technology, or restructuring the organisation to increase productivity. This type of change agent is analytical, rational and logical. The fourth and final type of change agent is the "organisational development" type who, looks at internal processes, such as communications, decision-making or dynamic groups. These agents are imaginative, future-orientated, and creative. Both Osentoski (2015) and Ottaway (1983) agree with Tichy and Nisberg's (1976) four-step approach. The role of a change agent needs to be clear and agreed by the key stakeholders. Tucker *et al.* (2015) discuss that the roles of the change agents are determined by the senior management of the organisation and should be communicated appropriately. Moreover, if there is a difference in the opinion of the change agent's role, this can impact the success of the change project and the change agent's sense of achievement.

2.5.2 Internal verses External Change Agents

The key to operating a sustainable and effective change management process within an organisation is to acquire sufficient change capacity. Mayer and Stensaker (2006) define change capacity as the ability to maintain daily operations, while implementing change on a continuous basis. External consultants are hired by organisations to resolve a particular need or problem. The contracts of externals could last for days, weeks, or even months, depending on the institutional requirement. Internal consultants are part of the organisation and work in an advisory and a support services role (Buono and Subbiah, 2014). Barnes and Scott (2011) describe the role of internal consultants as not being "clean or linear", but more "organic and messy". According to Barnes and Scott (2011), internal consultants are drafted in to undertake projects such as those seeking to advise on change interventions policy, structural and procedural projects, transfer of knowledge initiatives, and the implementation of the change plans that may impact the social culture

or realities in the organisation. While external consultants may be afforded similar roles and functions, internal change agents will be tasked with the day-to day running of the project and interaction with a majority of the stakeholders. As a result, the internal consultants tend to have a higher level of influence and access to the stakeholders.

2.6 Unplanned Events in a Change Plan

The current research seeks to investigate and highlight some of the solutions to the unplanned events that may occur in the execution of change projects. This section investigates the different definitions of unplanned events and proposes a definition to be used for the research. The section further examines rare and unusual events: how they occur, what contributes to such occurrences, and how organisations can best mitigate the resulting impact.

2.6.1 Defining Unplanned events

Various studies (Aaltonen *et al.* 2010; Floricel and Miller 2001; Orr and Scott 2008; Hällgren and Maaninen-Olsson 2005; Miller and Lessard 2001) have provided definitions of unplanned events in reference to the form of research and field under investigation. According to Aaltonen *et al.* (2010, p. 566), unexpected events are "any event that can be considered as a deviation from the original project plan." Floricel and Miller (2001) and Orr and Scott (2008) provide almost identical definitions of unplanned events, by suggesting that they are emergent, unforeseen, deviations or surprising events. Tukiainen *et al.* (2010) argue that unexpected events are occurrences that are not planned to emerge during the project duration. Aaltonen *et al.* (2010, p. 566) further argue that "unexpected events are incidents that emerge and evolve during the project and can therefore be considered as dynamic" and can be considered to occur due to uncertainty and lack of knowledge about every aspect of the project. Therefore, the general indication from the scholars is that unexpected events are created when conditions change from the initial plan over time.

Piperca and Floricel (2012) state that even in the most carefully planned projects, managers cannot predict all events with respect to anticipating risk. However, organisations that have developed the capacity for dealing with emergencies will have the prerequisite experience to handle any unforeseen circumstances. Risks, according to Aaltonen *et al.* (2010), are events whose probability of happening and the resulting impact are known and can be identified and can therefore be taken into account in the project plan. Ward and Chapman (2003) describe risk as an uncertain event that causes either a

positive or negative effect on the objectives of a project. Ward and Chapman further contend that, in any identified risk, there exist threats and opportunities that need to be managed. The authors agree that, while the risk management team is focusing on one of the aspects, considerable attention should be afforded to the other. Extant research has proposed various courses of action to reduce or neutralise the potential risks and offer opportunities for positive improvements.

For the purpose of this investigation, the unplanned events are those that were not foreseen in the initial plan and which, if not remedied, would be likely to have a significant impact in the change project or the entire organisation. As such, the assessment will not consider the risks. Adopting the view of Aaltonen *et al.* (2010), it is evident that risks are uncertain events that can be anticipated. Therefore, their occurrence does not surprise the project team and their impact is already known or subject to advance planning. This is the opposite of unplanned events, whose occurrence is not anticipated and their impact unknown.

2.6.2 Dealing with Rare and Unusual Events

Dealing with unexpected events usually differs from one organisation to the next, depending on the scale and scope of the event. Aaltonen *et al.* (2010) suggest that, in a major crisis situation, formal processes and organisation hierarchies are usually set aside to allow for a crisis mitigation protocol to handle the situation. In many circumstances, the formal mechanism of handling risks and unexpected events is usually set aside to allow for informal methods of dealing with the crisis (Hällgren and Maaninen-Olsson, 2005; Miller and Lessard, 2001). There are eight elements that affect a project's direction, either directly or indirectly: organisation, management, human, cultural, political, technical, economic and weather/natural conditions (Ellert *et al.* 2015; Stoelsnes and Bea, 2005). Each of the stated elements may be impacted by the unexpected events and hence influence the project to varying degrees. To improve the management of unexpected problems in projects, it is first necessary to accept uncertainty in the project plan, then change the way of training the project team to adopt different methods and tools in dealing with uncertainties (Ellert *et al.* 2015).

Isabella (1990) and Beck and Plowman (2009) argue that rare and unusual events can originate from inside and from outside the organisation. Rare and unusual events, by definition, occur infrequently and so represent a new learning challenge for the project team and organisations themselves (Beck and Plowman 2009). Dealing with rare and

unusual events could expose the lack of experience of the project team, which might necessitate the search for new ways to understand the event and create new approaches to mitigate the effects on the project plan (Abma, 2000). However, the occurrence of rare and unusual events, according to Beck and Plowman (2009), presents an opportunity for the organisation to learn from the experience. Therefore, organisations should encourage the involvement of multiple participants in these events, to enable the acquisition of different perspectives and interpretations of the event. Middle-level managers are a key source of experience in dealing with rare and unusual events. By virtue of their position and their dealings with operational activities, their views may be different from those of top management (Rouleau, 2005).

As mentioned above, this research will consider the impact of emergency unplanned events to a change project and how the experienced change agents mitigate the impact of these events. This section has distinguished between project risks and unplanned events in change projects, though the scope of this study does not include an investigation of project risks.

2.7 Managing Emergency Unplanned Events

As already discussed previously, dealing with unplanned events can be a common occurrence in a planned operational change project. Occasionally, in the life cycle of planned operational change projects, an emergency or a crisis event can occur. There are a number of mitigation models available to help reduce the impact of an emergency or crisis event. This section of the paper reviews the available definitions and models and outlines a definition and a model to be used to guide this research.

2.7.1 Defining Crisis and Emergency Events

This subsection provides some of the definitions of emergency and crisis events, as advanced by other researchers. Al-Dahash *et al.* (2016) and Richie (2004) in citing Pauchant and Mitroff (1992, p.15) describes a crisis as "disruption that physically affects a system as a whole and threatens its basic assumptions, its subjective sense of self, and its existential core." A crisis, therefore, is a major event affecting an organisation's products, services, financial position, reputation, or employees in significant ways. Alexander (2005) argues that the significance of a crisis is its unexpectedness and uncontrollability, which impacts the normal operations of an organisation. Beall (2007) supports this and describes a crisis as an unexpected, definitely unstructured event that occurs outside the typical framework of the organisation.

An emergency is defined as an unforeseen combination of circumstances the resulting state which requires immediate action (Jorgustin, 2012). Boisvert and Moore (2003) argues that an emergency is an abnormal situation requiring prompt action outside normal operational procedures, in order to limit damage to employees, property, or environment. Callahan (1994, p. 167) contends that an emergency refers to the threats and hazards that may not be anticipated, but which require an immediate response, or some core processes of an organisation that will be adversely impacted.

2.7.2 Crisis and Emergency Events Management

Mitroff *et al.* (2006) align both crisis management and emergency management activities, though suggesting that crisis management involves a wider range of activities than the latter. Emergency and crisis have similar characteristics in terms of their management, including the requirement to be proactive and to coordinate vast operational effort and communication (Boisvert and Moore, 2003). The Institute of Crisis, Disaster and Risk Management at George Washington University (2010) adopts a similar definition and aligns the following process steps to their emergency management response: organisational analysis, planning, decision-making, assigning of resources to mitigate effect, and recovery. Furthermore, it outlines a crisis management process as pre-event awareness, prevention and preparedness, post-event restoration, and transition. Boisvert and Moore (2003) suggests that two separate processes are not required and combines crisis and emergency processes into one simple process. Moreover, it states that crisis and emergency events frequently occur as a result of factors other than unforeseen events. It is often possible to identify them by an event trigger. These event triggers are small forewarnings that signal it is time to take mitigating action, which may successfully pre-empt the crisis or emergency event. However, in their identified four-stage crisis and emergency management model of mitigation, preparedness, response, and recovery, the centre does not include the event trigger as part of the process. According to this researcher, this is a significant omission.

Boisvert and Moore (2003) suggests a model that is very similar to that of Pearson and Mitroff (1993), which highlights five phase of crisis management: signal detection, preparation/prevention, containment/damage limitation, recovery, and learning. Before a crisis happens, or when a crisis is emerging, visible signals can be detected. When these early warning signals become apparent, change agents should be aware of the possibility of the crisis or threat and their potential impact. The prevention stage describes the proposed plan to prevent or mitigate the possible identified crisis from happening. In the

third phase, damage containment is crucial for minimising the effects of the crisis event. Damage limitation is followed by the process of recovery, which involves the process of getting the organisation or project that was affected back to normality. In the final stage, organisations are required to learn from crises, as there are many learning opportunities to help strengthen and improve operations. Fink (1986) and Coombs (2014) both suggest simpler models. Fink's four-stage crisis model consists of the prodromal crisis stage, acute crisis, critical crisis, and crisis resolution. Coombs' three-stage crisis model is even simpler and consists of the following phases: pre-crisis, crisis, and post-crisis. The models of Finks and Coombs's follow a similar format. From this researcher's point of view, Pearson and Mitroff's five-phase model is more specific to a process resolution. Pangarkar (2016), Paraskevas and Altinay, (2013), Wang and Hutchins (2010), and Hutchins and Wang (2008) all use Pearson and Mitroff's five-phase crisis model as their core model for their research. Therefore, this investigation will adopt the models proposed by Pearson and Mitroff (1993), Boisvert and Moore (2003) to conduct the investigation. The five steps are trigger/signal identification, mitigation effort, response, recovery, and learning. Within these five steps to mitigate the effects of the oncoming emergency, the change agents involved will collectively develop/identify solutions to mitigate the emergency. Through this solution development/identification the change agents will work towards a single goal being the emergency mitigation and problem solving through group discussion. The actions the change agents undertakes in their solution development/identification are aligned with both teleology process theory and action learning theory.

2.8 Proposed Crisis and Emergency Management Model

Following on from the discussion of crisis and emergency event management, this section takes a closer look at the five elements that make up the proposed crisis management model, namely event trigger/signal and identification, mitigation effort, response, recovery, and learning.

2.8.1 Event Triggers/Signal and Identification

In Pearson and Mitroff's (1993) crisis management model, the event signal detection is the first stage. Wang and Hutchins (2010, p. 555) describe this signal detection phase as involving "small but significant indicators that a crisis could occur begin to emerge". Moreover, they argue that this signal can be as simple as a customer complaint about goods or services supplied by the organisation. Sawalha *et al.* (2013) contend that the signal detection is an early-warning signal that precedes a crisis event. This early warning

is considered to be a first line of defence against the crisis. Early realisation of the warning signal could be critical in containing the problem before it gets out of control. When organisations fail to recognise and respond to the early event signal detection, the subsequent events can cause substantial loss in reputation, revenue, and even human life (Wang and Hutchins, 2010).

Paraskevas and Altinay (2013), in their crisis signal detection model, identify three separate steps that can help in recognising the signals. The first stage is scanning for signals. This inspection can be both technical and human-based and originates either internally or externally. Huffman (2004) argues that environmental scanning is deployed by organisations to make sense of their operating situation, especially for strategic purposes. The second stage is signal capture. Within this stage, the signal is recognised and defined, and the pattern is acknowledged and identified as a true or false alarm category. A key issue during this stage is signal diagnostics accuracy, which defines the ability not to confuse key signals with non-signals (Langseth *et al.* 1999). The third stage is signal transmission, which describes the process of communicating the message from the people who detected it to those responsible for launching the mitigation response measures. Finkelstein (2003) identifies that in some organisations the transfer of the signals is too complex, and the effort may fail as a result of the individual who detected the message failing to understand the correct communication channels to pass on the signal, or the organisation being too hierarchical to cope with the urgent information.

2.8.2 Mitigation Effort

Once a potential crisis and emergency event has been detected, "organisations need to develop a systematic plan for managing the crisis, identifying critical personnel and other resources, and allocating actions during the crisis situation" (Wang and Hutchins, 2010, p. 555). Sawalha *et al.* (2013) argue that mitigation effort is a proactive and a pre-emptive measure to prevent a potential event turning into a crisis and emergency. Boisvert and Moore (2003) identifies that a mitigation plan should have two parts: one dealing with operations and the other with communications. The centre further argues that before a plan is developed, the following steps need to be followed to mitigate the potential crisis and emergency event. Firstly, a review is conducted to investigate the potential event. Secondly, an assessment of the likelihood of the event occurring is carried out. Thirdly, worst-case scenarios are assessed. Fourthly, a study of previous situations is conducted to gain knowledge from lessons learnt. Fifthly, expertise is arranged to assist with the mitigation effort. Finally, a continuous monitoring system is established to check on the

progress of the event. The aim of the mitigation plan is to do as much as possible to prevent the crisis or emergency event from happening and to effectively manage any events that may happen, despite the best efforts (Pearson and Mitroff, 1993).

2.8.3 Response

Response refers to the crisis or emergency event containment and damage limitation. The effective management of this phase will detail plans for preventing a localised crisis or an emergency event from affecting other unaffected parts of the business or environment (Pearson and Mitroff, 1993). Pearson and Mitroff further discuss the two different approaches adopted by organisations when confronted with a containment and damage limitation crisis or emergency event. Firstly, damage containment activities and mechanisms are virtually impossible to develop during the midst of a crisis. Where these mechanisms are not in place, this will lead to time-wasting and will diminish the organisation's crisis or emergency management capabilities. Secondly, other organisations are better prepared for such events, devoting time and resources to ensure that effective damage limitation and containment procedures and mechanisms are in place. Boisvert and Moore (2003) agrees with Pearson and Mitroff (1993) and further states that the response plan should include: an assessment of the current situation, the initiation of the operational plan, and the communications plan.

2.8.4 Recovery

Wang and Hutchins (2010) and Boisvert and Moore (2003) agree that during this phase the organisation begins to enact procedures to resume business-as-normal activities. Business continuity efforts can be both long- and short-term plans and include communications to assure stakeholders of the organisation's imminent return to business. Sawalha *et al.* (2013) argue that this phase aims to recover from damage that has already been done to the organisation and its processes and to restore business functions. Pearson and Mitroff (1993) further add that the best prepared organisations have programmes that address both short- and long-term business recovery. Pearson and Mitroff identify two different questions that must be addressed: firstly, what are the minimal operational procedures that need to be recovered to conduct business as normal? Secondly, what are the main activities that must be performed to serve the organisation's most important customers?

2.8.5 Learning

Pearson and Mitroff (1993) refer to this last phase of the crisis and emergency management model as one that requires adequate and critical analysis from the lessons

learnt from the teams/personnel whom experience the event. Wang and Hutchins (2010) and Sawalha *et al.* (2013) agree with Pearson and Mitroff (1993) that this phase should be a no-fault learning phase.

> Wang and Hutchins (2010, p.556) further explain that a "no-fault learning phase (i.e., not blaming an individual for the crisis event) involves critical reflection on the crisis experience, analysing the crisis impact on central and ancillary processes, and then adapting behaviours and systems to improve the organisation's crisis management practices".

Pearson and Mitroff (1993, p. 54) suggest that very few organisations conduct this learning phase, because of the sense that this approach of examining past crisis events will "only reopen old wounds". Pearson and Mitroff (1993), however, have found that the exact opposite occurs in organisations that dedicate time and resources to re-integrating these lessons learnt from the teams and individuals involved into their crisis and emergency management process. Wang and Hutchins (2010) separate process-updating in their redesign phase. Boisvert and Moore (2003) includes this learning phase in its recovery phase.

In this section on theory building, the following concepts have been discussed: change management, teleological process theory, action learning theory, planning operational change, change agents, unplanned events in a change plan, managing emergency unplanned events, and the proposed crisis and emergency management model. This review will enable the researcher to align the research objectives with the research question ("How do experienced change agents mitigate the impact of an emergency unplanned event in a planned operational change project?") in the next section, which presents the conceptual framework.

3.0 Proposed Conceptual Framework

The current study adopts the five-phase emergency and crisis mitigation model proposed by Pearson and Mitroff (1993) and Boisvert and Moore (2003). In the development of this investigation, the researcher has attempted to describe the major concepts that are likely to be encountered. It is anticipated that the change mitigation model selected will guide the researcher in addressing the objectives of the study. The specific research objectives of this thesis are:

RO1. Identify the processes used by experienced change agents to mitigate the impact of an emergency unplanned event in a planned operational change project.

RO2. Develop a best practice model from the change agent's perspective on how best to mitigate an emergency unplanned event in a planned operational change project.

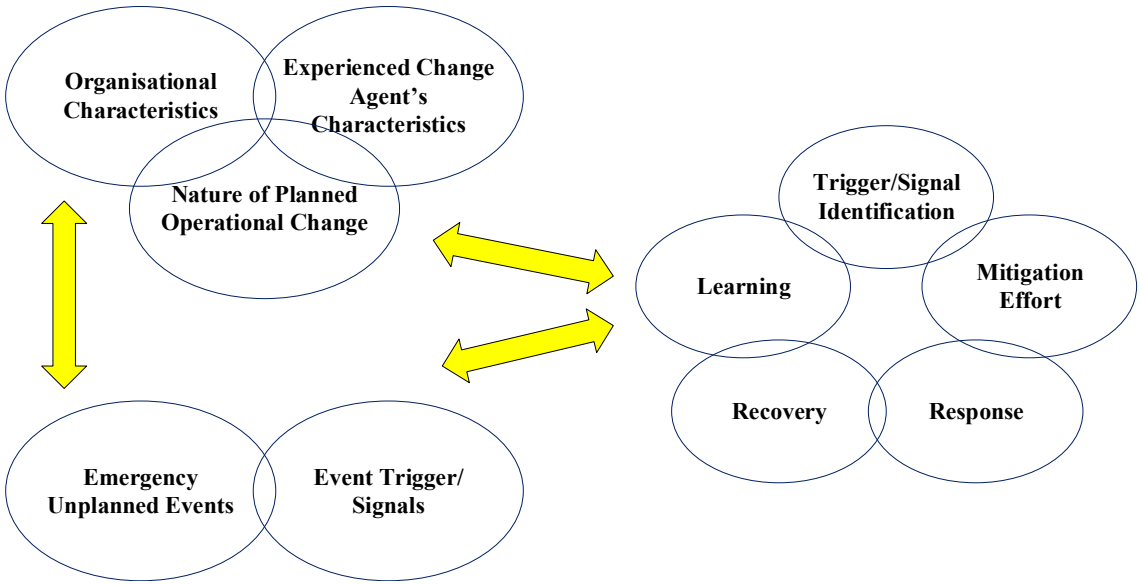

Figure 1: *Conceptual Framework*

This paper proposes a conceptual framework that will address and attempt to respond to the research question. The framework chosen is based on Kotter (2007) change management process. It is divided into steps that guide the implementation of change. Brisson-Banks (2009) compares five change models, including Kotter (2007) eight-step model for change management and suggests that Kotter's model should be used by organisations that wish to be successful in improvement projects. However, the model to be used by this study is based on the studies by Boisvert and Moore (2003) and Pearson and Mitroff (1993), which present a five-step model for change management (the right-hand side of Figure 1).

The conceptual framework in Figure 1 outlines the researcher's approach to the proposed research in seeking to understand how experienced change agents mitigate the impact of an emergency unplanned event in a planned operational change project. The reader is directed to start at the top left-hand side of Figure 1 to understand the flow of the conceptual framework. In developing the background to the research, the researcher will gather the organisational characteristics, such as industry, number of employees, local or international operations, and culture. From the obtained information, the researcher will be able to determine the role played by context in the development of a best practice change management model, as well as gathering the characteristics of the organisation

and the change agent. The information collected will help the researcher to select the experienced change agents to participate in the study. Given the processes followed by the change agents in undertaking planned operational change projects, it is incumbent upon the researcher to understand the design and execution of the plans.

The next section of the contextual framework (bottom left of Figure 1) deals with emergency unplanned events. Under this section, the researcher differentiates between emergency unplanned events and unplanned events. For the purposes of the study, emergency unplanned events will be the focus. And, in studying them, the significance of event triggers will be explored. Criteria for identifying the event triggers will be sought by the researcher to enable an understanding of when and how to detect the signals of emergencies.

The most significant aspect of this study is the exploration of the best process practises that can be used to mitigate the adverse effects of emergency unplanned events. To this end, the five-step model combination of both Boisvert and Moore (2003) and Pearson and Mitroff (1993) will be used as a framework for gathering the data on the processes that experienced change agents use at each stage to manage an emergency event. The five stages are identified in the conceptual framework above (right hand side of figure 1).

4.0 Conclusion

Within this paper, the researcher has discussed the background to the proposed research on the mitigation of emergency unplanned events in a change plan by change agents. The paper has also highlighted the models that have been used previously in managing a successful change project. Moreover, unplanned events and their occurrence have been discussed, together with the occurrence of emergency unplanned events and their event triggers/signals. The gap in the research has been identified, whereby the researcher proposes to use crisis and emergency management models to identify the mitigation process adopted by change agents in dealing with emergency unplanned events. The proposed model is a combination of the ideas from the studies of Boisvert and Moore (2003) and Pearson and Mitroff (1993), both of which suggest a similar five-step approach. The use of crisis and emergency management modelling to mitigate emergency unplanned events in a change plan by experienced change agents has not been identified during the review of the current literature.

The conceptual framework has been detailed and aligns with the research question: "How do experienced change agents mitigate the impact of an emergency unplanned event in a planned operational change project?" Within the conceptual framework, a number of areas are taken into account, such as organisational characteristics, change agents' characteristics, the nature of planned operational changes, emergency unplanned events, event triggers/signals, and the mitigating model used to manage the emergency unplanned event by an experienced change agent. Three research objectives were identified to aid the exploration of the main research question. The literature review aligns both with the research objectives and the theories and concepts required to examine the research question.

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PAPER 2

Examined on the 4th April 2019

PREFACE

After the examiners had accepted Paper 1, the researcher had a clear understanding of the methodology approach for Paper 2 and its development. Additionally, he understood the requirements for preparing and submitting a paper for a doctoral thesis. The researcher presented Paper 2 to the examiners on 5 April 2019 and, to his delight, it was recommended with no further review from the examiners. However, he received some suggested changes and made the appropriate alterations.

A key suggestion from the examiners was the development of specific objectives for the proposed study.

> Two research objectives are developed. These objectives seem very high level. The appendix with the proposed interview guide goes some way to setting some objectives but these are more implicit than explicit. A set of more specific objectives may be useful in this paper.

In developing Paper 1, the researcher proposed two research objectives. Research Objective 1 was: "Identify the processes used by experienced change agents to mitigate the impact of an emergency unplanned event in a planned operational change project." Research Objective 2 was: "Develop a best practice model from the change agent's perspective on how best to mitigate an emergency unplanned event in a planned operational change project." To enhance the research questions and objectives, the researcher suggested renaming the research objectives as Research Questions 1 and 2. Furthermore, the researcher aligned five research objectives with the two identified research objectives, as below.

> **Research Question 1.** Identify the processes used by experienced change agents to mitigate the impact of an emergency unplanned event in a planned operational change project.
>
> **Research Objective 1.** Identify the emergency unplanned events faced by change agents during their operational change projects.
>
> **Research Objective 2**. Identify the mitigation steps used by the change agents to resolve these emergency unplanned events.
>
> **Research Objective 3.** Develop a model identifying the mitigation steps used by change agents to resolve the emergency unplanned events.

> **Research Question 2.** Develop a good practice model from the change agent's perspective on how best to mitigate an emergency unplanned event in a planned operational change project.
>
> **Research Objective 4.** Refine the model developed in RO3 and identify a good practice model based on the findings from interviews.
>
> **Research Objective 5.** Analyse the feedback from the change agents and develop a final good practice model on how best to mitigate an emergency unplanned event in a planned operational change project.

The revised research questions and objectives, as above, gave a clear understanding of the required deliverable from this thesis. Additionally, the alignment of the research questions and objectives with the conceptual framework gave a clear approach to delivering the research objectives.

The examiners made the following minor comments on the work:

> Sampling strategy is not well enough clarified. The researcher notes (top of p.17) that they have access to a database of such agents. More information is required.

This comment was well received by the researcher, who addressed it by noting in the text that the database was his own personal data base, with many of the proposed interviewees being LinkedIn connections.

Description and justification of approach used in data gathering*:*

> Good clarity on this issue. Some confusion about 'ideal' (abstract) and saturation evident – to be resolved by the author.

This comment was also well received and quickly clarified. The researcher replaced the word "ideal" with "until data saturation", which enhanced the understanding of the data gathering approach.

Viva Examiners' Comments:

Clarification of interviewees as personal contacts.

The researcher would like to clarify that while a small number of interviewees many have been personal contacts the majority were at most acquaintances.

What are the limitations of the following model: Boisvert and Moore (2003) and Pearson and Mitroff (1993)?

The model developed for this research, adapted from Boisvert and Moore (2003) and Pearson and Mitroff (1993), is limited to the five mitigation steps contained within the

model. In this way, their model represents a lifecycle approach where the change agent should complete one step before moving to the next. This might not match the more complex tasks of the job of a change agent. The model is also strategic that is it gives a broad overview of the process but does not give a deeper understanding of the real life actions needed to be taken by an experienced change agent. Additionally, it does not identify the mitigation activities required to mitigate the emergency unplanned event in an operational change project.

Please clarify the inductive – deductive aspect of this approach.

Braun and Clarke (2006) identify an inductive analysis process as one of coding the data without trying to fit it into a pre-existing coding frame. However, Patton (1990) argues that in an inductive approach, the themes identified can be strongly linked to the data analysis. In the case of this thesis, the researcher identified the mitigation themes, as per the conceptual framework, prior to the data collection process. Therefore, the approach is not purely inductive in nature, while the themes come from the literature and inform the study, they were used as loosely held guiding principles as opposed to absolute categories. This recognises that the study exists on the continuum between induction and deduction, while more in the direction of induction.

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Paper 2: Research Methodology

ABSTRACT

This methodology paper discussed the techniques, approaches and procedures required for answering the research question in a valid, reliable and ethical manner. The researcher's interpretative philosophical position aligns with the proposed data gathering approach. The selected philosophy allows the researcher to interpret the elements of study and enables the inclusion of the human dimension (Prasad and Prasad, 2002). A qualitative research strategy will be adopted, because this fits well with the objectives of the inquiry and is compatible with the design choice (Domegan and Fleming, 2003). The research approach is designed in five steps that incorporate all activities from design, piloting, data collection, data analysis and verification. Interviewing techniques are discussed. According to Holloway and Wheeler (2010), the most popular approach in qualitative interviewing is to use semi-structured interviews. To achieve the saturation point in data analysis, the number of interviews is discussed. As the research question is specific to experienced change agents, this sample population has been identified. Due to the geographical location of the researcher, both skype interviews and face-to-face interviews will be used. Yin (1994) identifies that the use of an interview protocol enhances and maintains the reliability of the research. The interview guide is presented and consideration for the interview environment is included. The ideal duration of the semi-structured interview is discussed and a time identified. Due to the quantity of data to be analysed the researcher will use NVivo software. Ethical consideration had been given to the research approach and to the research population. The limitations of qualitative interviewing is highlighted and discussed.

1.0 Introduction

This section revisits the research questions, objectives and conceptual model. It outlines the methodological approach used to answer the research question and deliver on the research objectives.

1.1 Background

1.1.1 Research Question

To answer the research question: "How do experienced change agents mitigate the impact of an emergency unplanned event in a planned operational change project?", the researcher has identified a five-step model combination of both Boisvert and Moore (2003) and Pearson and Mitroff (1993). This will be used as a framework for gathering the data on the processes that experienced change agents use at each stage to manage an emergency event. This study explores the best process practices that are be used to mitigate the adverse effects of emergency unplanned events. For the purpose of this research, an experienced change agent is described as a professional with ten years work experience and has managed a minimum of five operational change projects.

1.1.2 Research Objectives

The current study adopts the five-phase emergency and crisis mitigation model proposed by Pearson and Mitroff (1993) and Boisvert and Moore (2003). In the development of this investigation, the researcher has attempted to describe the major concepts that are likely to be encountered. It is anticipated that the change mitigation model selected will guide the researcher in addressing the objectives of the study. The specific research questions (RQ) and objectives (RO) of this thesis are to:

RQ1. Identify the processes used by experienced change agents to mitigate the impact of an emergency unplanned event in a planned operational change project?

RO1. Identify the emergency unplanned events faced by change agents during their operational change projects.

RO2. Identify the mitigation steps used by the change agents to resolve these emergency unplanned events.

RO3. Develop a model identifying the mitigation steps used by change agents to resolve the emergency unplanned events.

RQ2. Develop a good practice model from the change agent's perspective on how best to mitigate an emergency unplanned event in a planned operational change project?

RO4. Refine the model developed in RO3 and identify a good practice model based on the findings from interviews.

RO5. Analyse the feedback from the change agents and develop a final good practice model on how best to mitigate an emergency unplanned event in a planned operational change project.

1.1.3 Conceptual Framework

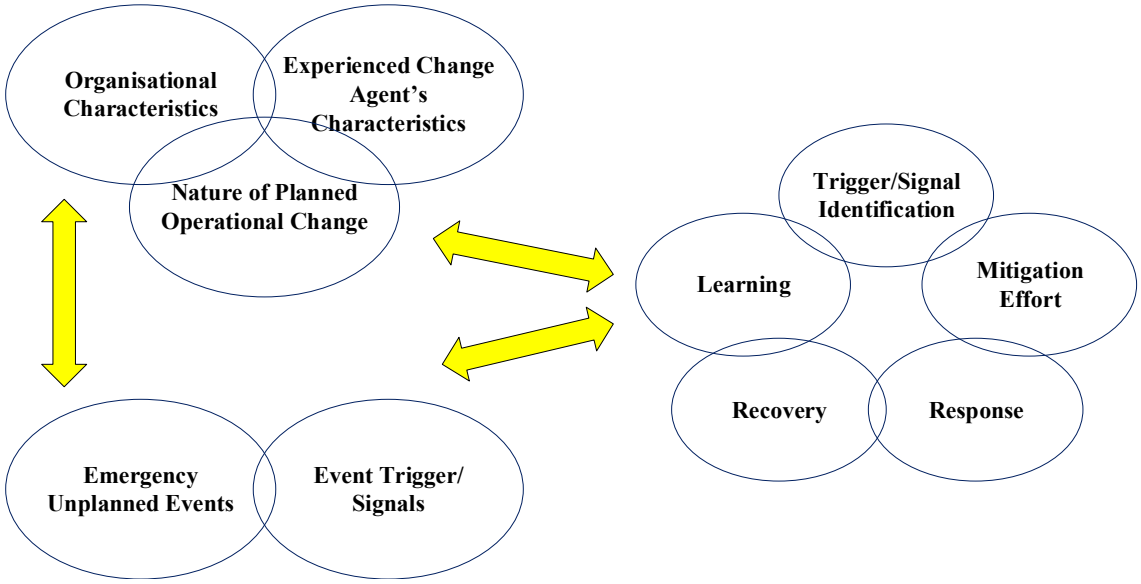

Figure 1: Conceptual Framework [1]
(Source: developed for this research)

As outlined in Paper 1 (section 3.0, and p. 26), the conceptual framework in Figure 1 outlines the researcher's approach to the proposed study in seeking to understand how experienced change agents mitigate the impact of an emergency unplanned event in a planned operational change project. A most significant aspect of this study is the exploration of the good process practices that can be used to mitigate the adverse effects of emergency unplanned events. To this end, the five-step model combination of both Boisvert and Moore (2003) and Pearson and Mitroff (1993) will be used as a framework for gathering the data on the processes that experienced change agents use at each stage to manage an emergency event. The five stages are identified in the conceptual framework above (right-hand side of Figure 1).

[1] Mitigation model is described as the full five step approach to resolution of the emergency unplanned event. Mitigation effort is described as the actions identified to resolve the emergency unplanned event.

1.2 Paper 2 Approach

The approach is aligned with the conceptual framework to answer the research question "How do experienced change agents mitigate the impact of an emergency unplanned event in a planned operational change project?" Section 2 discusses the research philosophy of the study. Section 3 outlines interviews techniques, which is the data collection method. Section 4 discusses interview techniques. Section 5 outlines the interviewing procedures. Section 6 considers the data analysis techniques to be used. Section 7 discusses the research validity and reliability. Section 8 discusses the study limitations. Section 9 outlines the ethical consideration of the study. Section 10 is the conclusion, which draws together for the methodological approach.

2.0 Interpretive Research Philosophy

An interpretive research philosophy is used to answer the research question and to deliver the research objectives. The selected philosophy allows the researcher to interpret the elements of the study and enables the inclusion of the human dimension (Prasad and Prasad, 2002). Denzin and Lincoln (2011) argues an interpretative qualitative approach enables the researcher to derive meaning and relationships in order to formulate a better understanding of a process. An inductive process will be used, which will be aligned with a qualitative research approach. This strategy allows for the collection and interpretation of data that is not readily quantifiable (Patton, 2015).

2.1 Interpretivism

Cohen and Manion (1994) suggest the interpretivist researcher understands the world of human experience. Cardoso and Ramos (2012, p.77) describe interpretive research as the focus "on human sense making of the situation as they occur and of the meaning of the people assigned to the situation". Saunders *et al.* (2009) suggests interpretivism is used in the study of individuals in a social world, and it is complex and unique. Creswell (2009) identifies that interpretivist researchers observe reality through the research subject's view, i.e. through their own background and experiences. Thanh and Thanh (2015) argues that when an interpretative study is being carried out researchers will seek methods that will aid them in understanding the relationship of the researched subject and their environment, and the part they play in creating the social fabric to which they belong. Thanh and Thanh (2015) further suggest that interpretivists will view the world through the researched subject's eyes and will choose those who have their own interpretation of reality, to cover all viewpoints. According to Willis (2007, p. 4) interpretivists believe

"an understanding of the context in any form of research is conducted is critical to the interpretation of the data gathered". De Loo and Lowe (2017) suggest when interpretive research deployed the use of conversation and stories from live observation of an event around this the objects of the research are constructed. However, these constructs are subject to the interpretation of the researcher.

Interpretative researchers predominantly use qualitative research methods (Thomas, 2003; Willis, 2007; Patton, 2015; Thanh and Thanh, 2015; Creswell, 2016). Willis (2007) claims that qualitative studies often give rich data, which is necessary for interpretivists in understanding the context of the study. Thomas (2003, p. 6) suggests that interpretivists usually support qualitative methods because their paradigm "portrays a world in which reality is socially constructed, complex and ever changing". Thanh and Thanh (2015) agree and suggest interpretivists prefer qualitative methods to quantitative methods for examining reality.

2.2 Inductive versus Deductive Research

Interpretivism highlights by its nature the value of qualitative data to gain the knowledge required (Kaplan and Maxwell, 1994). Ormerod (2010) simplifies the differences as inductive deriving conclusions from a set of data or observations and deductive as using logic and mathematics, to achieve results that are certain to be true by definition. Creswell (2016) agrees but differentiates between inductive and deductive process of gathering data, as the inductive process incorporates the gathering data, refining the data to make sense by grouping segments into codes and themes, and finally larger perspectives. On the other hand, the deductive process normally incorporates advancing a theory, and collecting and analysing data to deductively test the theory. Creswell (2016) further aligns the inductive process with qualitative research and the deductive process with quantitative research. Bernard (2000) refers to inductive analysis as the use of observations to confirm ideas and linking towards a known fact to form explanations of how the phenomenon works. Patton (2015, p. 541) agrees and adds qualitative inductive analysis as "generating new concepts, explanations, results, and/or theories from specific data of a qualitative study."

"Qualitative methods employ data in the form of words: transcripts of open-ended interviews, written observational descriptions of activities and conversations, and documents and other artefacts of people's actions" (Kaplan and Maxwell, 1994 p. 32). A qualitative research strategy will be adopted, because this fits well with the objectives of

the inquiry and is compatible with the design choice (Domegan and Fleming, 2003). This strategy allows for the collection and interpretation of data that is not readily quantifiable (Patton, 2015). Denzin and Lincoln (2011, p.3) states, "qualitative research is a field of enquiry in its own right" which includes the connectivity of terms, concepts and assumptions. Locock *et al.* (2004) argue that, through a qualitative approach, the researcher can gain a greater and deeper understanding of the event, allowing the researcher to record the interviewee's role and interactions in managing the event. Creswell (2009) agrees and adds that qualitative research enables the researcher to explore and understand individuals or groups being affected by a human or social problem.

3.0 Research Approach and Design

The section outlines the research approach and design that will be adopted to answer the research question. As discussed in section 2.0, an interpretive inductive qualitative research strategy is used to answer the research question and deliver the research objectives. The data gathering method used is semi-structured interviews, as outlined in section 4.1 below.

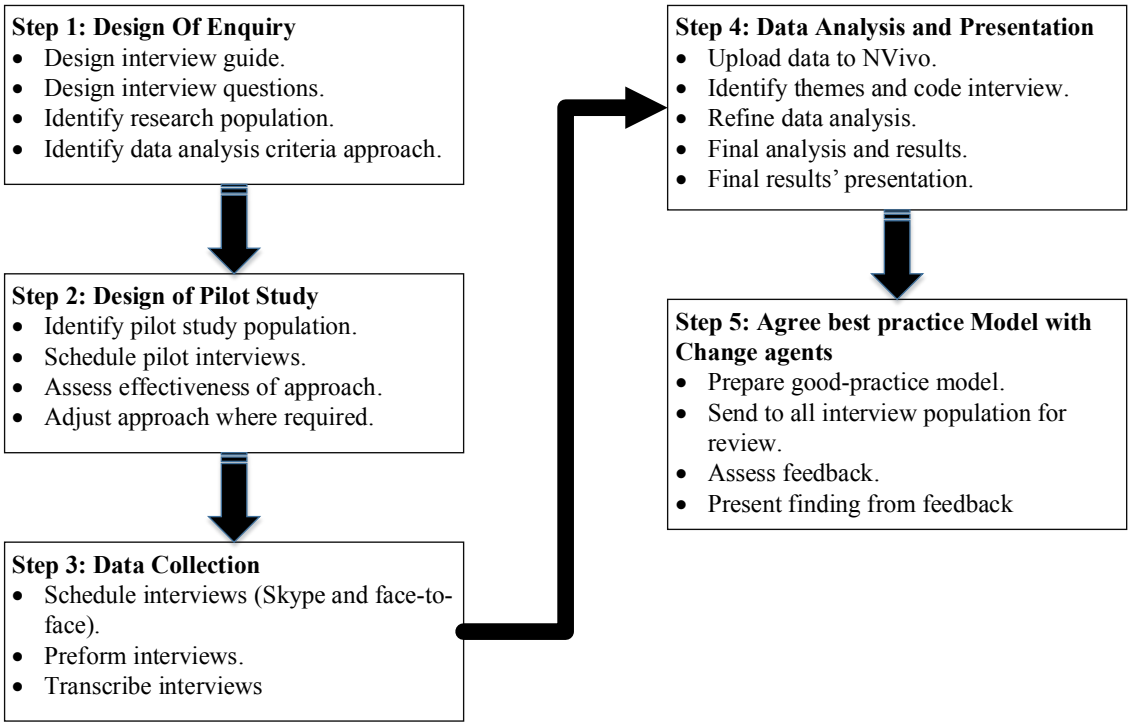

Figure 2: Research Design

(Source: developed for this research)

The researcher is proposing a five-stage approach to answer the research question (see, Figure 2). The five stages are: stage 1: design of enquiry: stage 2: design of pilot study, during this stage approximately five interviews will be performed to assess the effectiveness of the approach and adjustments made where required; stage 3: data collection; stage 4: data analysis and presentation; and stage 5: all change agents interviewed upon their agreement will be sent the proposed good practice model for their comments. This stage is a key step in delivering the research objective "Develop a good practice model from the change agent's perspective on how best to mitigate an emergency unplanned event in a planned operational change project". On completion of the data analysis, a good practice model is prepared. This model is shared with a subset of the original research population for their comments and feedback on the research results. Their feedback is then assessed and incorporated into the good practice model, which will deliver research objective 2.

4.0 Interview Techniques

This section outlines the interview techniques that enable the researcher to design the engagement approach with an interviewee to achieve research objectives. The techniques discussed in this section are semi-structured interviewing, qualitative interviewing, interview protocol, interviewing peers, and justification of sample size and interview population.

4.1 Semi-structured Interviewing

According to Stuckey (2013), there are three fundamental categories of interviews: semi-structured, structured, and unstructured. The main distinction between these categories is the degree to which the participants have the power to control the nature, process and content of the interview, because each has a different structure and mode of conducting it (Edwards and Holland, 2013). Mason (1996) identifies interviews as the mechanism for exploring people's understanding, meaning and knowledge of an event. Merriam (1998) discusses the use of interviews as the most popular method of data collection for a qualitative research methodology. Nunkoosing (2005) agrees and states that interviews are widely used as data gathering in qualitative research and are of special benefit when the researcher wants to study a particular area in depth. The purpose of the interview is to gather details of real work activities from the interviewee, with respect to interpreting the meaning of defined phenomena (Kvale, 1983).

Prasad and Prasad (2002) suggest the use of semi-structured interviews as being very effective in the collection of data. Holloway and Wheeler (2010) identify semi-structured interviews as the most popular approach used in qualitative interviewing. As this method is a face-to-face interaction, the researcher can observe the non-verbal communication and gain more insight from the interviewee, as well as clarifying any misunderstandings. Semi-structured interviews give flexibility to the researcher to explore an idea within a given response in detail, hence increasing the scope beyond the structured interview. Ryan *et al.* (2009) agree and add that with open-ended questions the interviewer can change topic and explore issues that arise, thus allowing for flexibility where the researcher wishes to explore further questioning, guiding the discussion and probing for additional information when necessary (Bryman, 2004; Creswell, 2012). A semi-structured interview has a considerable amount of key questions that assist in defining the areas or topics to be addressed. However, the interviewer has the opportunity to vary the order of the questions and their wording to explore issues that arise spontaneously (Ryan *et al.,* 2009). Semi-structured interviews enable the interviewer to explore new paths of enquiry that emerge during the interview that were not initially considered (Gray, 2004). This enables the interviewer to reword questions, as required, during the interview and develop a conversation focusing on a new relevant topic (Patton, 2015). For the purpose of this study semi-structured interview will be used.

Patton (2015) argues that structured interviews are highly rigid by nature because they are usually administered verbally and do not employ prompts. Stuckey (2013) adds that structured interviews have very little scope for follow-up queries that may attempt to investigate a participant's responses, and hence warrant increased depth and details. Creswell and Creswell (2017) argue that structured interviews are suitable for formal, organised set-ups and the structure makes it possible for the interview to be conducted within the shortest time possible, especially when "depth" is not a priority. They usually begin with an "icebreaker" question, which is meant to make the interviewee relax (Öhman*, et al.,* 2013). An example can be a question about the weather or the traffic situation on the way to the interview.

Öhman *et al.* (2013) describe unstructured interviews as a dialogue with a purpose, because they allow the researcher to collect in-depth data, as they combine structure and flexibility. However, critics have argued that unstructured interviews usually do not reflect preconceived ideas or theories and are conducted with the minimum organisation

(Edwards and Holland, 2013; Stuckey, 2013). This means that the unstructured interviewing process can be chaotic, because of little planning and no structure. Creswell and Creswell (2017) explain that unstructured interviews, also referred to as in-depth interviews, do not follow any given sequence and are preferred for informal contexts.
For the purpose of this research, the researcher identifies semi-structured interviews as the data collection method which best matches the requirements of this research and enables the researcher to achieve the research objectives.

4.2 Qualitative Interviewing

Brinkmann (2013) perceives qualitative interviewing as an adventure in research about other people, their cultural beliefs, behavioural patterns, problems, and possible solutions. It also enables the researcher to understand the similarity and differences between their own perspective, knowledge, or culture. The nature and structure of the interview depend on what the researcher wants to understand (Olson, 2016). According to Edwards and Holland (2013), it is a process of finding out what others think and feel about the world around them. It is aimed at gaining in-depth knowledge through their views and main points of their perspective about the phenomenon being explored, comparing with their own understanding (Mikėnė, *et al.,* 2013). Given that the researcher becomes part of the process, one needs to be a profound conversationalist and a keen listener (Brinkmann, 2013). Collins and Hussey (2014) perceive qualitative interviewing as a component of ethnography, where one makes a prolonged observation of the phenomena in its natural set-up for some time, while trying to be part of the environment and culture. In qualitative interviewing, the interviewer becomes a participant and perceives them as colleagues and not as the subject of the research, as could happen in a quantitative inquiry (Ritchie *et al.,* 2013).

In qualitative interviewing, the researcher does not "seek truths" from the field to validate existing theories and models but seeks an understanding of reality from the subjective view of the participants (Collins and Hussey, 2014). The researcher's paradigm determines what ethical issues are, what is significant, and the accuracy and completeness of the findings (Patton, 2015). According to Olson (2016), qualitative interviewing is not a plenary session in which the interviewer asks questions and the respondent supplies the answers but rather an informal, friendlier conversation in which the interviewer seeks to understand reality from the interviewee's perspective.

4.3 Interview Protocol

An interview protocol is a tool that helps the researcher to prepare for the interview, as it ensures that they know the questions to ask in general and to determine the most important data to collect (Amankwaa, 2016). An interview protocol is beyond a list of relevant and systematic questions. According to King *et al.* (2018), it includes the procedure of interviewing; a script of what the interviewer has to say before and after the interview; the prompts that help to gain informed consent; and these guide the interviewer on the relevant data to be collected. Amankwaa (2016) explains that an interview protocol acts as a tour guide who directs the interviewer through the interview, as it gives prompts and directions to make sure that the interview scope is the focus.

The protocol helps the interviewer to ensure that key points are not forgotten and relays vital information to the interviewee, including the confidentiality issues, purpose and statement, and where the collected data will be used (Amankwaa, 2016). Castillo-Montoya (2016) developed an interview protocol refinement framework that has been used in qualitative interviews and yielded good results by improving the reliability of findings obtained. The framework is a four-phased interviewing procedure; phase 1, the researcher ensures that the interview questions are aligning with purpose of the interview and research question, phase 2, construct an inquiry-driven dialogue with the interviewee, phase 3, receive feedback on the interview, and phase 4, pilot the protocol to other interview schedules or research studies (Castillo-Montoya, 2016). This framework is used to test a designed protocol and determine its suitability for a qualitative inquiry.

4.4 Interviewing Peers

According to Cutrona *et al.* (2013), peer interviews, also known as a peer-to-peer interviews, involve members of the same team, working group or learning grade. In research, they involve the researcher in interviewing fellow students, co-workers, team-mates, or people in the same profession. Bellotti *et al.* (2015) claim that one advantage of peer-to-peer interviews is increased knowledge transfer, as they are held in a friendly, informal setting. There is an increased response rate, because they constitute a two way conversation, where the interviewee is free to ask for clarification and the guards are down. Sadykova (2014) believes that peer-to-peer interviewing increases the morale of the respondent or prospective employee, because it is a peer conducting the interviewing, rather than a boss or a stranger whom they know little about. Moreover, peer-to-peer interviews are like group discussions, only the interviewers have a guide and protocol to direct the conversations (Bellotti *et al.,* 2015).

However, Cutrona *et al.* (2013) warn that peer interviews are prone to tangential conversation originating from the intended question and veering off to private matters, thus affecting their peers. This requires a well-designed interview protocol to keep the peers focused on the interview objectives. Moreover, Bellotti *et al.* (2015) note that peer interviews are time-consuming if they are not well-structured and systematic. This is because the peers may take more time than required to explore a given area in detail, and in the process discuss other issues that are of little importance to the interview topic (Sadykova, 2014). In some situations, close peers may give wrong information about an issue to please the interviewer, who is their colleague, or to guard personal interests (Bellotti *et al.,* 2015). It requires a highly skilled interviewer to guide a peer-to-peer interview, especially when relatives or close friends are involved, because the discussion can easily go off topic. It is noted, the researcher will endeavour to clarify all topic during the interview to avoid assumptions being misunderstood.

4.5 Justification of Sampling Size and Interview Population

4.5.1 Justification of Sample Size

One of the common misconceptions about the population sample used in qualitative inquiry is that its size may not be sufficient for obtaining reliable and credible information that adequately addresses the research questions (Robinson, 2014). In some incidents, the sample size may be extremely small, to support the claim of the researcher having obtained either theoretical saturation or data redundancy (Gentles *et al.,* 2015). Moreover, the sample size might be too large to allow case-oriented, deep analysis of the findings that is typical of a qualitative study. According to Cleary *et al.* (2014), the determination of an optimum sample size in qualitative inquiry is exclusively a matter for the researcher's experience and judgment in evaluating the nature and amount of data to be collected and the intended use of the data. The specific research methodology, sampling procedures utilised, and the research products expected also affect the selection of the minimum sample size in qualitative inquiry (Robinson, 2014).

Normally, a qualitative inquiry requires a smaller sample size than needed in a quantitative inquiry (Ritchie *et al.,* 2013). Research has revealed that the bigger the sample size the higher the generalisability and credibility of the findings from quantitative research (Gentles *et al*., 2015). However, this is not the case for qualitative inquiry, because the qualitative data normally reaches saturation with a considerably small sample size. Creswell (2009) argues that the sample size for qualitative inquiry needs to be large

enough to obtain data that adequately describes the phenomena under consideration and to sufficiently answer the research question. Creswell and Creswell (2017) further add that the main aim of qualitative researchers is to attain data saturation. Saturation is attained when the addition of further participants fails to lead to additional data or perspectives (Leung, 2015).

Collins and Hussey (2014) and Patton (2015) recommend the use of data saturation for obtaining a sample size in qualitative studies. For ethnographic studies, Cleary *et al.* (2014) and Creswell (2016) recommend a sample size of between 30 and 50 respondents. For grounded theory, Ritchie *et al.* (2013) and Oppong (2013) recommend 25 to 50 participants, while Creswell (2009) recommends 20 to 30. For a phenomenological study, Creswell (2009) recommends 5 to 25 respondents, while Marshall *et al.* (2013) suggest a minimum of six participants. These recommendations are evidence-based from a wide array of research experience and peer-review and can therefore help researchers to estimate the number of participants required. However, Leung (2015) argues that the sample size should rely on the attainment of saturation. Researchers have developed formulae and models over time that can compute the minimum sample size for a given qualitative study, subject to the research design and purpose of the study.
For the purposes of this research, the researcher is proposing to perform 25 to 35 interviews as the sample size to obtain adequate data saturation.

4.5.2 Interview Population

Patton (2015) suggests a purposeful sampling strategy to be used, as the interviewees are selected due to their years of experience, and their experience in change projects and skills sets. To answer the research question "How do experienced change agents mitigate the impact of an emergency unplanned event in a planned operational change project?", the researcher will need to consider the guidance offered by Patton (2015). The researcher, who has 30 years' experience as a change agent and has access to a personal contact list of experience change agents, will endeavour to select candidates from different industrial sectors and types of organisation, in order to produce a purposeful sample.

4.6 Skype and Face-to-Face Interviewing

4.6.1 Skype Interviewing

Interview via Skype, commonly known as video interviewing, involves an interview conducted entirely through a video chatting platform on one's computer (Deakin and Wakefield, 2014). Given the ever-evolving technology influencing every discipline, more

people are opting for Skype interviews, to cut on cost and increase convenience (Oates, 2015). According to Janghorban *et al.* (2014), Skype interviewing is highly convenient for interviewees, because they have no need to travel to a given location that is unfamiliar, and it reduces the interview tension that is created when conducting face-to-face interviews. Research has revealed people are more comfortable with a familiar setting, such as their lounge, than new unfamiliar places, such as company offices (Janghorban, *et al.,* 2014; Oates, 2015). Therefore, they are less nervous and more relaxed during Skype interviews than in office face-to-face interviews. Moreover, Skype allows the interviewer to conduct more than one interview at the same day, since the interviewees are participating from the comfort of their homes, with minimum discomfort and anxiety (Deakin and Wakefield, 2014).

However, according to Oates's (2015) study, many interviewees do not treat Skype interviews with the seriousness of other types, such as face-to-face interviews, hence in-depth data collection can be a challenge. Moreover, Skype interviews rely on the strength and bandwidth of the internet between the interviewer and the interviewee and a poor network connection can adversely affect the interview results (Adams Hutcheson and Longhurst, 2017). Therefore, it is not a universally applicable model of interviewing participants, since there are places in the world – especially in developing economies – that have a poor internet connection or no connection at all (Seitz, 2016). Furthermore, Skype interviews require some level of skill and knowledge of information technology and how the internet works. The researcher has to download the application, create an account using private contacts, and run the interview over a browser (Janghorban *et al.,* 2014). On the other hand, face-to-face interviews simply require the physical presence of the participants.

4.6.2 Face-to-face Interviews

Face-to-face interviews, also referred to as in-person interviews, constitute one of the oldest and most common methods of collecting data for qualitative analysis (Creswell, 2014). According to Vogl (2013), a standardised face-to-face interview is used to collect factual data about the participant's attitudes, evaluations, and preferences concerning a given issue. It is commonly used when conducting *ad hoc* and *omnibus* research studies (Flick, 1998). Since the interviewee and the interviewer are physically present during the interview, clarification on given questions ensures increased response rates and in-depth data collection (McConnell, *et al.,* 2013). Irvine *et al.* (2013) argue that face-to-face interviews help the researcher to collect both verbal and non-verbal cues, such as body

language and facial expressions. Therefore, the researcher can determine the level of enthusiasm of the interviewee, because the level of focus on the interview topic can be gauged. The interviewer can easily determine how comfortable the interviewee is with the questions being asked and the subjects being explored (King, *et al.,* 2018). Face-to-face interviews are mostly preferred for job recruitment, as the managers have an opportunity to gauge the authenticity of the information given by the candidate through further probing and practical demonstrations (Duncan and Fiske, 2015).

Szolnoki and Hoffmann (2013) identify the cost of having the interviewer and interviewee in a physical location as the main challenge of face-to-face interviews, compared to online interviews. The interviewer has to find a convenient time for holding the interview, subject to the availability of the interviewee (Mason, 1996). This means that face-to-face interviews are prone to postponement and delays, due to the schedule of the interviewee (Duncan and Fiske, 2015). Skype interviews are easier to hold than face-to-face interviews, because online interviews can be conducted whenever the interviewee feels comfortable (McConnell *et al.,* 2013). According to Szolnoki and Hoffmann (2013), face-to-face interviews allow only a small sample size, because of time and financial constraints, and are hence preferred for qualitative inquiry. Other logistical hindrances include weather conditions, a person's health status, the distance to be travelled, the level of documentation required for international participants, and the specific time of day that the interview is scheduled (Duncan and Fiske, 2015).

The researcher resides in the Middle East with many of his personal contact residing worldwide due to the distance between the geographical location of the researcher and the interviewee population, the researcher has identified that a combination of both Skype and face-to-face interviews is required to achieve the research objectives.

5.0 Interviewing Procedure

This section outlines the interview procedures that enable the researcher to design the optimal engagement with an interviewee, to achieve research objectives. The procedures discussed in this section are interview environment, interview guide, data collection process, and interview length.

5.1 Interview Environment

Finding an ideal environment for a given interview is one of the crucial aspects of a good interview schedule (Mason, 1996). Most interviewers do not concentrate on the preparation of the interview environment but focus on the content of the interview, therefore ending up with a tension-filled interview and obtaining less of the expected data (Creswell, 2013). According to Flick (1998), the researcher should start with the scheduling of the interview. Scheduling is one of the biggest challenges faced by interviewers, because it involves the integration of time schedules both of the interviewer and the interviewee. Mikėnė *et al*. (2013) recommend the use of central interviewee tracking system. This helps the researcher to easily and quickly coordinate with potential candidates, so as to conduct the interview when their daily schedule allows. It is advisable to notify a candidate as soon as they are chosen for the interview, so that the interview is scheduled in a timely manner. Edwards and Holland (2013) argue that the time set for the interview should be appropriate for the interviewee. For instance, if an interview is scheduled between 12 noon and 2 pm, it is a considerate gesture to provide some lunch or refreshments for the candidates. Stuckey (2013) argues that because some respondents may be working, they need to understand the interview duration and exact time to start, so that they adequately plan for their time away from work. The researcher will contact the interviewees in advance to outline the research objectives and agree on timing and location of interview with each participant.

Another way of improving the interview environment is to upgrade the environmental basics. According to Mikėnė *et al*. (2013), it is crucial for a researcher to walk around the prepared interview room and imagine how it look as a stranger. According to Flick (1998), it is a good gesture to offer the candidates soft drinks, coffee or water before the interview. The interior appearance of the interview environment may influence the characteristic behaviour of the respondents (Stuckey, 2013). Incorporating cultural aspects into the design of an interview environment is also important. For instance, certain colours may have cultural symbolism and anecdotes that offend the respondent. According to Sadykova (2014), a German person may see red having romantic connotations, a Chinese person may interpret it as a sign of business, and an African person may see it a sign of danger. Creswell (2013) maintains that a large spacious room may look intimidating to some conservative candidates, while liberals may interpret as a sign of honour (Creswell, 2013).

According to Edwards and Holland (2013), an interview can sometimes turn into official, stuffy exercise, which limits the amount and quality of data to be collected. For instance, an uptight environment can make the candidates too nervous, so it is advisable to adopt a friendly, conversational strategy for an interview. Creswell (2016) identifies listening as one of the best skills for a person conducting a qualitative interview. A keen listener makes the interviewee feel comfortable and controls the interview pace in a relaxed manner. This results in more authentic, off-the-cuff data about the phenomena under investigation.

5.2 Interview Guide

According to Patton (2015), an interview guide outlines the issues and questions that will be explored during the interview. It is usually prepared to compel the researcher to ensure that the fundamental flow of inquiry is the same for every participant. A guide delimits the scope of the issues under discussion and enables the interviewer to probe, explore and ask questions, so as to highlight and elucidate those issues (Stuckey, 2013). With a well-prepared interview guide, the interviewer is free to design a conversation within a given topic, can construct the questions for the interview spontaneously, and can establish a suitable conversational style that best addresses the subject under inquiry. Patton (2015) concludes that an interview guide is a checklist used by an interviewer during the interview, to ensure that relevant data is collected and that the conversation does not go off on a tangent.

Creswell (2016) adds that an interview guide ensures that the researcher has used the available time for the interview to the best purpose. A guide makes the interview schedule more systematic when many respondents are involved, because it delimits, in advance, the topics to be explored. According to Öhman *et al.* (2013), an interview guide is essential when undertaking focused group discussions, because it focuses the discussion on the topic, while also allowing personal perspective and experience to flourish. Using a well-designed interview guide, the researcher possesses a rough journey itinerary that can be used to navigate through the interview (Boyatzis, 1998). However, the guide does not outline explicitly what is expected to happen at each phase of the journey, the duration of each layover, or the location of the researcher at a given time (Sadykova, 2014). Despite these shortcomings, interview guides do offer a sense of direction for the intended journey and point to the ground it is expected to cover.

Interview guides are designed to facilitate the semi-structured interview approach and suggest questions and topics on relevant areas to be covered, while helping the researcher to keep track on time and content (Legard *et al.,* 2003). Moreover, the interview must allow free expression of thoughts and experiences, while giving the researcher the opportunity to redirect the interview, where necessary. The researcher must endeavour to keep the questions brief, clearly articulated and phrased in clear language and terminology (Patton, 2015). Hence, the objective of the interview is to ensure that key themes and relevant topics are discussed, in order to answer the research question.

Chapple (1999) suggests that before the interview commences the researcher should thank the interviewee for their participation and remind them that their contribution to the research is confidential. The interviewer should advise on the duration of the interview and ask for permission to record the interview. This should occur before the format and purpose of the interview are outlined (Patton, 2015). In addition, the interviewer should advise that a transcript of the interview will be made available to the interviewee and that if they wish to make changes, the researcher will facilitate the request. Complying with the above approach ensures that the interviewee is put at ease and initiates dialogue (Legard *et al.,* 2003). A conscious effort should be made to minimise the researcher's point of view, by avoiding leading questions and allowing the interviewee to speak freely (Legard *et al.,* 2003). Once the interview is completed, the interviewee should be thanked for their participation and advised that a copy of the transcript will be forwarded to them, on request.

Based on the researcher's literature review, and guided by the conceptual framework, the interview guide for the current study is designed in six sections. Section 1 outlines the research objectives and requests informed consent from the interviewee to proceed with the recorded interview. Section 2 gathers background data on the interviewee. Section 3 collects background information on the organisation in which the emergency event occurred. Section 4 considers the change projects under discussion. Section 5 outlines the mitigation approach taken during the emergency events. Section 6 gives closing comments with the interviewee. See, Appendix 1 for the interview guide.

5.3 Data Collection Process

The data collection process from interviews depends on the type and structure of an interview. Bernard (2000) recommends that data collection should start immediately after the introduction and salutations, as the participant, the change agent settles in. According

to Flick (1998), an interview schedule is an essential tool for collecting data, especially qualitative data. It is especially crucial in circumstances where highly customised data is required and where there is a chance of probing further to unearth the underlying issues (Stuckey, 2013). Data collection in face-to-face interviews includes non-verbal cues that are obtained through observation and used during data triangulation to validate information collected (Stuckey, 2013). Given that interviews are normally utilised for collecting accurate, in-depth and reliable data, the researcher is tasked with the search for the right participants who will have the information being sought.

The accurate screening of participants is important for obtaining authentic data from an interview (Burnes, 2004). Purposeful sampling is recommended for interviews, because it gives the researcher powers to screen and select the right participants for the inquiry (Robinson, 2014). During the interview, the interviewer can pay close attention to the body language and facial expressions of the respondents to determine the degree of discomfort or excitement occasioned by certain questions (Vogl, 2013). Such questions might highlight incidents of falsified information, when there is a clear dissonance between what a participant is saying and what they really think about the subject (Stuckey, 2013). For instance, a participant may claim to be enjoying their everyday tasks and assignments within a given environment, while clearly exhibiting signs of distress and demotivation. To collect reliable and valid data, the interviewer needs to be more aware of what is not discussed than what is being discussed, observing the participant's body language and try to probe further, so as to unearth the underlying reasons for such behaviours (Boyatzis, 1998).

5.4 Interview Length

According to Patton (2015), there is no universally set duration of an interview, because the length depends on the type of interview, the purpose of the interview, the interview structure, the content, and the industry. Nonetheless, researchers and practitioners have given the evidence-based estimation of the length of a given interview. For a face-to-face interview, the ideal length is 45 to 60 minutes, while a telephone interview can take about 25 to 30 minutes (Brinkmann, 2014). Given that peer-to-peer interviews and focus group interviews involve lengthy discussions, they can take more than 60 minutes, unless they are semi-structured with a well-designed guide (Vogl, 2013).

According to Collins and Hussey (2014), an interview needs to be long enough to allow the interviewer get to know the interviewee and to collect all the relevant data. However,

it should not last too long, in case the interviewee gets exhausted or the conversation goes off topic. To ensure that the interview lasts a shorter but productive time, the interviewer needs to develop a good interview protocol, align the questions to the topic or subject matter, and ensure that the follow-up questions do not elicit new responses and new questions (McConnell *et al.,* 2013). The researcher or interviewer should always avoid being vague, because this attracts tangential discussions and can lead to little data being collected (Burnes, 2004). This ensures that the interview length is within the recommended levels. The researcher proposes a 60 minutes initial interview duration, which will be validated during the pilot study.

6.0 Limitations of Qualitative Interviewing

While the use of interviews in qualitative inquiry has been common, because it allows the interviewer to collect in-depth knowledge about a given phenomenon, it is not without limitations (King *et al.,* 2018). Unlike a quantitative survey that is independent of the researcher's subjective interpretation, a qualitative interview is prone to biases both from the researcher and the participant (Bernard, 2000). A qualitative interview relies on the interviewee's ability to honestly and accurately remember any information about their own life, circumstances, behaviours, opinions, or thoughts that the interviewer is seeking to understand (Brinkmann, 2014). The use of observations is important in understanding what individuals actually do, rather than what they say they do during an interview. Creswell (2016) adds that qualitative interviewing is time-consuming and relatively expensive, compared to other methods of data collection such as online questionnaires and surveys. Moreover, to transcribe and code data from interviews with open-ended questions is labour-intensive and requires highly experienced researchers to obtain the expected data, categorise, record, and draw meaningful themes from the raw open-ended data (Boyatzis, 1998). Moreover, varied conclusions can be drawn from the same data, subject to the personal perspectives of the researcher.

Given that interviews, especially face-to-face ones, consume time, they will be scheduled according to the interviewee's convenience and will therefore be subject to potential delays and postponement. According to Mason (1996), a researcher employs qualitative interviewing so as to gain a profound understanding of reality and meaning, according to the respondent in a given context. It can therefore be emotionally taxing. Bernard (2000) further argues that qualitative interviewing is normally open-ended, which means the interviewee has considerable control over the nature of the data collected. It is therefore

difficult for a researcher to objectively verify the findings from the subjective views of the respondent. According to Creswell (2016), it is hard to investigate causal-effect relationships among research variables using qualitative interviews. This is because of the challenge of reducing qualitative aspects, such as feelings and experiences, into numerical values for statistical analysis. Therefore, qualitative interviewing requires thorough planning, so as to obtain accurate and less-ambiguous findings, because it is more focused on qualitative judgment rather than statistical relationships.

7.0 Data Analysis

It is generally agreed in the literature that qualitative data analysis should be completed as soon as possible (Miles and Huberman, 1994; Marshall and Rossman, 1999). Miles and Huberman (1994) further outline their belief that there are three steps to qualitative data analysis: step 1, data reduction, step 2, data display, and step 3, drawing conclusions and verification. Sarantakos (1998) agrees and suggests a similar five-step approach specifically for qualitative interview data analysis: step 1, transcribing audio video files, step 2, checking and editing the transcript data, step 3, analysing and interpreting the data, step 4, explanation of findings, and step 5, verification of findings. The researcher will follow a similar approach to Sarantakos (1998) for qualitative data analysis and use NVivo software as the data analysis tool.

7.1 NVivo

Hoover and Koerber (2011) assess three of the qualitative analysis tools available (NVivo, ATLAS.ti and MAXQDA) and suggest that NVivo has the best balance of power and ease of use. Sinkovics and Alfoldi (2012, p. 833) agree and identify NVivo as their qualitative data analysis software of choice and further discuss an example of a literature review casebook of journal articles which used NVivo for survey, interview and case study data analysis. As a tool, NVivo can facilitate text coding and add tasks such as literature analysis, aggregating themes, and building arguments supported by themes from the literature (DiGregorio, 2000).

7.2 Developing Themes and Coding

Boyatzis (1998, p. 5) describes thematic analysis as a process that enables researchers to assess a wide variety “of information is a systematic manner that increases their accuracy or sensitivity in understanding and interpreting observations about people, events, situations and organisations”. Moreover, it allows qualitative researchers a methodology

to easily communicate their observations and findings to others who are using different methods. Miles and Huberman (1994, p. 56) refer to coding as analysis and describes it as "tags or labels for assigning units of measure to the descriptive or inferential information" collected during the data gathering process. Boyatzis (1998, p. 44) discusses three thematic analysis approaches, namely theory-driven, prior-research-driven and data-driven. The researcher has identified the data-driven approach will be used in step 3, analysing and interpreting the data, of Sarantakos' (1998) five-step approach which best suites the proposed research study.

Thematic Analysis - Data-driven approach

Step 1	1. Decide on sampling and design issues
	2. Selection subsampling
Step 2	1. Reduce raw information
	2. Identify themes within subsamples
	3. Compare themes across subsamples
	4. Create a code
	5. Determining the reliability
Step 3	1. Apply the code to the remaining raw information
	2. Determine validity
	3. Interpret results

Table 1: Thematic Analysis – Data-driven Approach
(Source: adapted from Boyatzis, 1998, p. 44)

8.0 Research Reliability and Validity

This section aligns the research reliability and validity with the proposed research.

8.1 Research Reliability

Perry (2001) describes reliability as the auditability of the research process, the approach to achieve acceptable levels of the study reliability. Kelliher (2005) loosely describes reliability as the stability or consistency of the measure being used. Patton (2015) states that when designing a qualitative research study, the researcher should be concerned about validity and reliability, to enable good analysis of results and to judge the quality of the study. Golafshani (2003, p. 601) states: "to ensure reliability in qualitative research, examining of trustworthiness is crucial". Seale (1999) states that trustworthiness lies at the heart of all issues normally discussed as validity and reliability. Yin (1994) identifies that the use of an interview protocol enhances and maintains the reliability of the research.

Silverman (2000) agrees and adds that pretesting the interview protocol and guide will help to give reliability to the research. Taking into consideration the literature above, the researcher has developed an interview guide (see, Appendix 1), which includes the interview protocol which is tested in step 2 in the research design.

8.2 Research Validity

Golafshani (2003, p. 602) describes validity in a qualitative study as not being "a single, fixed or universal concept but rather a contingent construct, inescapably grounded in the processes and intentions of particular research methodologies and projects". Validity in qualitative research relies on descriptive data being presented, so that the reader is guided by the researcher to understand the meaning of the study undertaken (Kelliher, 2005). Yin (1994, p. 33) defines validity as the "establishment of a causal relationship, whereby certain conditions are shown to lead to other conditions, as distinguished from spurious relationships". Angen (2000) suggests validity is an interpretive understanding of the truth. Kelliher (2005) discusses the use of triangulation as a method to validate content in a qualitative study and suggests that – when using multiple data sources – establishing a chain of evidence and review the finding with a participant in the data collection process will enhance the validity of the findings. Creswell (2009) suggests confirming the results from the data collection process with participants, so that they can judge the accuracy and validity of the study. In the current study, the researcher adopts this approach as the proposed step 5 in the methodology approach (see, Figure 2), where a subset of the change agent will be approached and asked to validate the applied research findings, as per research objective 2.

9.0 Ethical Consideration

Miles and Huberman (1994, p. 288) claim, "naiveté about ethics itself is unethical". Patton (2015, p. 495) agrees and observes: "the power of interviewing can put the interviewees at risk. The interviewer needs to have an ethical framework for dealing with such issues". All planned interviews with the research population in the current study will be voluntary, with informed consent and privacy procedures in place (Miles and Huberman, 1994). Patton (2015, p. 496) outlines his 12-step ethical issues check sheet, from which the ethics framework developed for the proposed data collection interviews has been adapted (see, Table 2). To ensure data confidentiality and protection, the researcher proposes to assign a code for each interviewee, and both sets of data will be recorded in an Excel password-enabled file on a standalone laptop. All interviews will be

digitised and their transcripts will be stored on the standalone laptop. Backup files will be maintained on a secure external hard drive.

Ethical Issue	Mitigation Action	Reference
• Full disclosure on research topic and background	• Outline research question and objectives of research.	Interview Guide Appendix 1 (section 1a).
• Process confidentiality and anonymity in analysis	• Overview of data to be collected. • Interview data storage protocols. • Data confidentiality and anonymity in analysis. • The interview will be recorded.	Interview Guide Appendix 1 (sections 1b, 1c, 1d, 1f).
• Informed consent	• Does the interviewee consent to continuing with the interview?	Interview Guide Appendix 1 (section 1g).
• Accuracy of reporting	• A transcript of the interview will be made available to the interviewee, if required.	Interview Guide Appendix 1 (section 1h).
• Convenience and comfort	• Interviews will be coordinated with interviewees at their convenience. • If interviews are scheduled between 12 noon and 2 pm, refreshments will be supplied. • Location will be chosen with consideration to impact on interviewee.	Section 5.1: Interview Environment
• Research academic protocols adherence	• Before the data gathering phase of this study is initiated, ethical approval will have been granted by the WIT School of Business' Ethics Committee.	Application in progress for ethical approval

Table 2: Ethics Framework
(Source: adapted from Patton, 2015, p. 496)

10.0 Conclusion

This methodology and research design paper opens with a reintroduction of the research question, the two research objectives, and an overview of the conceptual framework. An interpretive inductive philosophical position is taken for this study. The selected philosophy allows the researcher to interpret the elements of study and enables the

inclusion of the human dimension (Prasad and Prasad, 2002). An inductive process is used, which is aligned with a qualitative research approach. The research approach and design are outlined in Figure 2, outlining a five-step approach to answer the research question. Step 1, design of enquiry, step 2, design of pilot study, step 3, data collection, step 4, data analysis and presentation, and step 5, agree good practice model with change agents.

Interview techniques and procedures are discussed. Holloway and Wheeler (2010) identify semi-structured interviews as the most popular approach in qualitative interviewing. Semi-structured interviews are identified as the data collection method. A justification of the sample size of 25-35 interviews is made and the interview population is identified as experienced change agents who have managed a minimum of two change projects. The proposed data collection methods are interviews conducted through Skype, and face-to-face interviewing. Yin (1994) identifies that the use of an interview protocol and guide enhances and maintains the reliability of the research. To maintain reliability in the data collection, the interview environment and guide need to be consistent. The data collection process and interview length are discussed, confirming that a 60-minute interview is required.

The case to ensure the research reliability and validity is discussed and outlined. The ethics framework is presented in Table 2, outlining the interviewees' knowledge of the research, their consent to participate, their confidentiality and anonymity, as well as aspects of data protection and adherence to academic protocols. The final section looks at the limitations of qualitative interviewing, which is the data collection method.

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12.0 Appendix

12.1 Interview Guide

1. **Informed Consent from Interviewee,**
    a. Outline of research question and objectives of research.
    b. Overview of data to be collected.
    c. Outline the interview data storage protocols.
    d. Discuss data confidentiality and anonymity in analysis.
    e. Duration of interview is approximately one hour.
    f. The interview will be recorded.
    g. Does the interviewee consent to continuing with the interview? **Yes or No**?
    h. A transcript of the interview will be made available to the interviewee of required. Is it required? **Yes or No?**
    i. Does the interviewee consent to be contactable in the future with regard to this research? **Yes or No?**

2. **Background Information on Interviewee**
    a. Name of interviewee.
    b. Level of education.
    Prompt: Third level and professional qualifications.
    c. Number of years' work experience.
    d. Number of years' experience as a change agent.
    e. Current title of interviewee.
    f. Number and type of change projects participated in.
    g. Are you a consultant (internal or external)

3. **Background Information on Organisation**
    a. Type of organisation (multinational, national, etc.).
    b. Industry type (manufacturing, service, financial, etc.).
    c. Number of employees within the organisation.
    d. Number of years participant has worked with the organisation.

4. **Background to the Change Projects under Discussion**
    a. Can you describe the change project work you do in your organisation?
    Prompting towards change projects and their outcome.

b. Can you give a brief description of the change project under discussion that matches the criteria for the research?

Prompts

- *Type of project (process/technology/people).*
- *What was the project team structure?*
- *What was the experience of the team members involved?*
- *What initiated the project (customer/productivity, etc.)?*
- *Can you describe how the problem was first detected?*
- *How did you know the problem was real?*
- *Can you describe how the problem was resolved?*

5. Mitigation Questions on the Change Project under Discussion

a. Within all change project unplanned events do occur. Have you experienced such a problem in your projects?

Prompt: emergency is an abnormal situation requiring prompt action outside normal operational procedures, in order to limit damage to employees, property, or environment.

b. Trigger/signal identification

Prompts:

- *Scanning for signals:*
  - *How did you know something was wrong? (Human or technology)?*
- *Signal capture:*
  - *What initiated the problem? (Human or technology)*
  - *How did you validate that the problem was real?*
  - *During the validation of the problem how detailed was the assessment?*
- *Signal transmission:*
  - *Once you identified the problem, what happened next to mitigate the problem?*
  - *How was it communicated?*

c. Mitigation of effort

How did you deal with the problem?

How was this plan developed?

d. Response

What was the response approach?

Was it damage limitation/containment or was it to follow existing organisational procedures?

e. Recovery

Was there a communication plan, if so how and to whom was it delivered?

What were the plan to minimise the impact of the problem?

Was there prioritisation of activities in the recovery, if so why?

f. Learning

How do you or your organisation minimise the reoccurrence of the problem?

How was this experience used within your organisation?

6. Closing Remarks

- Thank the interviewee for their participation.
- Ask for feedback on the flow of the interview and the questions asked. Make a note of comments given.
- Confirm the availability of the transcript and change process, if required.
- Ensure that contact details are shared for transcript review.

PAPER 3

Examined on the 11th October 2019

PREFACE

The researcher presented Paper 3 to the examiners on 11 October 2019. The paper was recommended with minor comments. Paper 3 outlined the piloting of the research methodology, in which the researcher conducted five interviews with experienced change agents from his personal contact database. The interview guide was tested for flow and sequence of questions. The pilot process gave the researcher the opportunity to trial and test the interview mechanism, including recording and transcribing the interviews. Additionally, this pilot enabled the researcher to trial the proposed data analysis technique, whereby the transcripts were read for familiarisation then manually coded before being uploaded to NVivo for a deeper analysis. Finally, this paper outlines and presents the initial findings.

The examiners recommended Paper 3 but made a few pertinent comments that had to be addressed.

First, it will be recalled that the researcher updated the research questions and objectives for Paper 2, but this was the examiners' first opportunity to review the same. They commented on the research objectives and made the following suggestion:

> On page 7 *RO3. To develop a model identifying the mitigation steps used by change agents to resolve the emergency unplanned events* – is this not an outcome of your work rather than a research question, if this is a question could it be re-phrased? Same for 4 and 5 – *RO4. To refine the model developed in RO3 and identify a good practice model based on the findings from interviews. RO5. To analyse the feedback from the change agents and develop a final good practice model on how best to mitigate an emergency unplanned event in a planned operational change project*. Again I find these to be the outcomes of your work rather than research questions.

The above point made by the examiners was well received by the researcher, who rephrased the objectives as follows:

> **Research Question 1.** How do experienced change agents mitigate the impact of an emergency unplanned event in a planned operational change project?
>
> **Research Objective 1.** To identify the emergency unplanned events faced by change agents during their operational change projects.

> **Research Objective 2a.** To identify the resolution steps used by the change agents to resolve these emergency unplanned events.
>
> **Research Objective 2b.** To identify the activities conducted by change agents in each resolution step to resolve emergency unplanned events.
>
> **Research Question 2.** Is it possible to develop a good practice model from the change agent's perspective on how best to mitigate an emergency unplanned event in a planned operational change project?
>
> **Research Objective 3.** To align the resolution steps with a good practice framework using business process analysis models.

The changes in the research objectives were accepted by the examiners.

The second pertinent comment from the examiners was as follows:

> It might be worth considering changing the terminologies employed in order to avoid any potential confusion between 'mitigation model' and 'mitigation effort'. Phrases such as 'mitigation steps', 'mitigation process', and 'mitigation themes' are used also.

On reflection, the researcher agreed with the examiners' suggestion and changed the terminology, to avoid confusion. The term "mitigation effort" was left but the remaining terms were updated to "resolution steps", "reaction model", "correction process" and "reaction themes".

The third pertinent comment from the examiners was as follows:

> Consider replacing the word 'Pilot' with 'initial phase', 'initial interviews', 'phase 1' or something like that and then it makes it easier to justify the inclusion of the initial five interviews in your larger sample.

The researcher had spent quite some time examining the literature in his area and on methodologies to examine the best approach for his research. He hoped to keep the classification of the first interviews as pilot studies, as other studies that use the idea of phased interviews tend to do so for a methodological reason, and differences between phases might be expected. The researcher found this approach difficult to justify. However, he added a new paragraph to Section 2.4 entitled "Interview Guide Changes and Use of Pilot Data", which justified the use of the pilot data in the main study's findings.

The researcher very much appreciated the valuable feedback from the examiners and found that it was of great help in the final construction of the paper. Additionally, he found that it formed the underpinning approach to Paper 4 (The Findings).

Viva Examiners' Comment:

Can the researcher clarify Table 10 further and how this helps in identifying best practices in this study?

The researcher utilises the best practice alignment for business process redesign as identified by Reijers and Mansar (2005), illustrated in table 10, as a guide in the alignment of the resolution steps and mitigation activity matrix. The seven best practice alignment categories are used to align the mitigation steps and activities to enable the user to easily identify the pertinent mitigation steps and activities within the category to mitigate an emergency unplanned event.

Reference:

Reijers, H. A. and Mansar, S. L. (2005) 'Best practice in business process design: An overview and qualitative evaluation of successful redesign heuristics', *The Journal of Management Science,* Vol. 33, No. 4, pp. 283-306.

Paper 3: Research Design and Initial Findings

ABSTRACT

This research design implementation and initial findings paper discusses the design of the pilot study, the analysis of data retrieved, and the emerging themes and findings to date. A purposeful sampling approach was used for identifying the pilot population, as this method gives the researcher scope to screen and select the appropriate participants for the inquiry (Robinson, 2014). The five-step approach of Sarantakos (1998) – specifically for qualitative interview data analysis – was identified as the approach to be used for this research study. The data gathered during the interviews is aligned with the five-step conceptual framework/theoretical model of trigger/signal identification, mitigation effort, response, recovery and learning (Boisvert and Moore, 2003; Pearson and Mitroff, 1993). Due to the quantity of data to be analysed the researcher used NVivo software as the data analysis tool. During the five pilot interviews a total of 64 themes were identified and aligned with the five-step reaction model's themes. The emerging themes and findings to date are outlined. The researcher discusses the top five themes aligned with the five-step reaction model and identified an approach to facilitate the development of a good practice model, whereby the collected emerging themes are aligned with best practice alignment for business process redesign as identified by Reijers and Mansar (2005). From the pilot study, the researcher has gained a greater insight into the approach required to answer the research questions and this is outlined when revising the conceptual framework that was outlined in paper 1. Ethical consideration from the piloting process is discussed, and ethical approval for this research has been granted.

1.0 Introduction

This section revisits the research questions and objectives. It outlines the approach to validating the research method using a pilot study, as outlined in section 2. This pilot study involved the interviewing of five change agents, as per the criteria set out. The qualitative data from these interviews was analysed in accordance with the five-step approach of Sarantakos (1998).

1.1 Revised Research Question and Objectives

To answer the research question: "How do experienced change agents mitigate the impact of an emergency unplanned event in a planned operational change project?", the researcher has identified a five-step reaction model, which is a combination of the models offered by Boisvert and Moore (2003), and Pearson and Mitroff (1993). In the development of this investigation, the researcher has attempted to describe the major concepts that are likely to be encountered. It is anticipated that the change reaction model selected will guide the researcher in addressing the research questions of the study. After discussions with the external examiners during the paper 2 presentation, the researcher enhanced the research questions and objectives. The specific research questions and objectives are as follows:

RQ1. How do experienced change agents mitigate the impact of an emergency unplanned event in a planned operational change project?

RO1. To identify the emergency unplanned events faced by change agents during their operational change projects.

RO2a. To identify the resolution steps used by the change agents to resolve these emergency unplanned events.

RO2b. To identify the activities conducted by change agents in each resolution step to resolve emergency unplanned events.

RQ2. Is it possible to develop a good practice model from the change agent's perspective on how best to mitigate an emergency unplanned event in a planned operational change project?

RO3. To align the resolution steps with a good practice framework using business process analysis models.

1.2 Paper 3 Approach

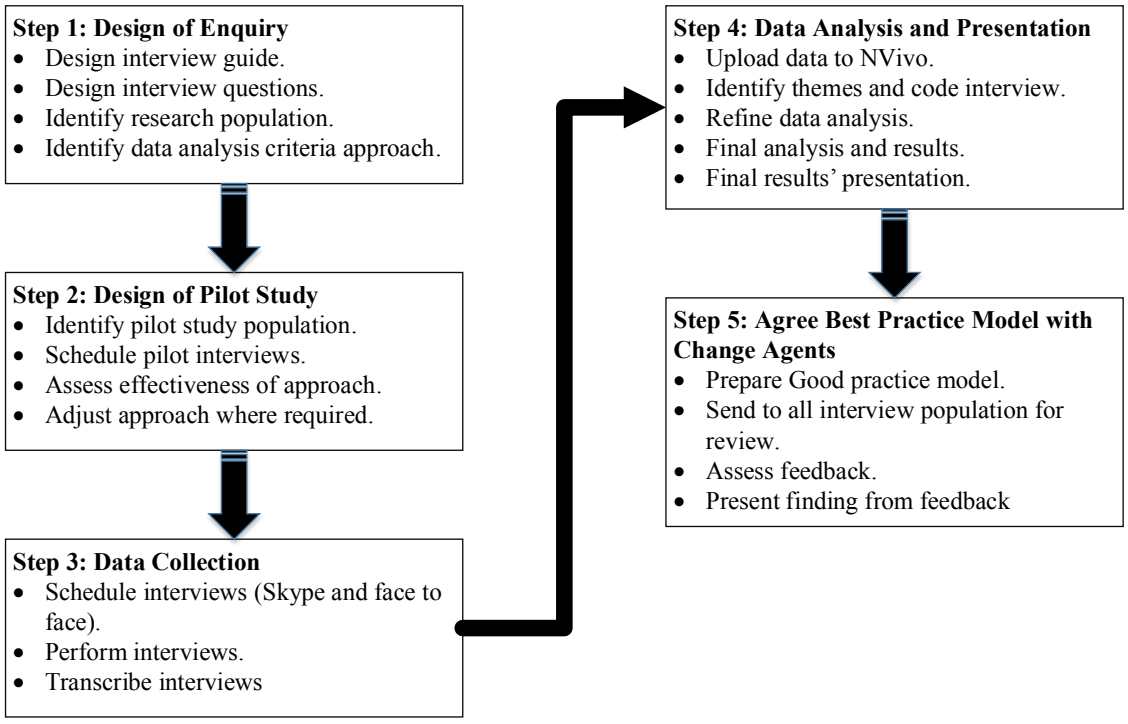
The findings of the pilot study will be aligned to RQ1 and will discuss the initial findings of RO1 and RO2. The development of a good practice model will help the researcher to align the findings from the study to answer RO3 and RQ2. Section 2 discusses the design

of the pilot study, including the pilot study population, the profile of the interviewees, and the interview administration and data collection. Section 3 outlines the approach to the data collection, reading, and summarising the codes, plus the data analysis and alignment with the five-step reaction model themes. Section 4 discusses the emerging themes and findings from the data. Section 5 outlines the development of a good practice model which will help in aligning the themes with a good practice model. Section 6 revisits the conceptual framework. Section 7 discusses the ethical considerations of the approach. Section 8 discusses the concluding remarks and next steps.

2.0 Design of Pilot Study

Van Teijlingen and Hundley (2001) recommend using a pilot study as a means of pre-testing of the research approach. The purpose of the pilot study is the validation of the approach, as set out in paper 2, section 3 (Research Approach and Design).

Figure 1: Research Design



Source: Developed for This Research

From the research design in figure 1 above, Step 1 (Design of Enquiry) was discussed in paper 2. In paper 3, Step 2 (Design of Pilot Study) will be fully discussed and implemented, while, Step 3 (Data Collection) and step 4 (Data Analysis and Presentation) will be assessed for the effectiveness of the approach, using the sample population.

2.1 Identify Pilot Study Population

Patton (2015) suggests that a purposeful sampling strategy should be used, as the interviewees are selected due to their years of experience, and their experience in change projects and skills sets. The researcher has identified the pilot study population as professionals with 10 years' working experience and have managed a minimum of five operational change projects. From the researcher's personal contact list, a research population of 34 change agents has been identified, all of whom match the criteria, as set out above. As discussed in Paper 2, the sample size of the research population was to be between 25 and 35 interviewees, in order to obtain adequate data saturation. For the pilot study, five change agents were selected to assess the effectiveness of the research approach. Each interviewee was assigned a code (CA) and a number that equates to the sequence of the interviews. Therefore, CA1 was the first change agent to be interviewed (see, Table 1).

Table 1: Pilot Study Sample Population

Candidate Code	**CA01**	**CA02**	**CA03**	**CA04**	**CA05**
Job Title	Senior Specialist	Consulting Partner	Chief Advisor	Senior Manager	Vice President
Background	International Consultant	International Consultant	International Consultant	Internal Consultant	Internal Consultant
Location	Dubai	Dubai	Dubai	Dubai	Dubai
Industrial	Consulting	Consulting	Utilities	Utilities	Utilities
Firm Size	Large	Large	Small	Large	Large
Why Chosen?	Interviewee fits sampling criteria				
	Interviewee is known to the researcher				
	Expectation of honest feedback				
	Location is convenient to both the interviewer and the interviewee				

2.2 Profile of Pilot Interviewees

Burnes (2004) argues that accuracy in the screening of participants is important for obtaining authentic data from an interview. Purposeful sampling is recommended for interviews because it gives the researcher powers to screen and select the right participants for the inquiry (Robinson, 2014). The researcher has followed the recommendations of Burnes (2004) and Robinson (2014) and has identified interviewees who fit the profile of experienced change agents (see, Table 2).

Table 2: Profile of Pilot Interviewees

Sr.	Code	Age	Gender	Nationality	Education Level	Years of Experience as a Change Agent	Change Management Training Undertaken	Internal/External Consultant	Works Experience	Number of Change Projects Managed	Interview Duration (in Minutes)
1	**CA01**	52	M	UK	MBA	31	Lean Black Belt	External	Internationally	20+	45.14
2	**CA02**	39	M	UK	MSc	16	Internal Courses	External	Internationally	10+	45.53
3	**CA03**	53	M	Irish	BEng	34	Experience	External	Internationally	30+	41.01
4	**CA04**	37	M	UAE	MBA	10	Lean Black Belt	Internal	Domestic	30+	22.38
5	**CA05**	37	M	UAE	MBA	10	Lean Black Belt	Internal	Domestic	30+	24.13

Interviewees CA04 and CA05 are both UAE national and as such English is their second language. Both interviews were data rich with pertinent information for the research topic. However, the interviewees found it difficult to elaborate on the topics to the same standard as a native English speaker.

2.3 Interview Administration and Data Collection

The selected interviewees were contacted by phone regarding their proposed participation in the research programme. Once they had accepted the invitation, they were issued with an information sheet (Appendix 1), which gave them time to consider the nature of the study and the implications of participating in the research. The interviewees were also informed of the time demand required in performing the interview. The researcher followed the recommendation of Edwards and Holland (2013), by outlining that the time set for the interview should be appropriate for the interviewee. The timing and location of the interviews were agreed with the interviewees. The five pilot interviews completed to date were all conducted face to face, with each scheduled for 60 minutes.

At the start of each interview, the researcher sought permission to record the discussion; introduced the research topic and the interview process; and informed the interviewees that they would remain anonymous throughout the process, and that the data gathered would be confidential. Once consent to record the interview was granted, the interviewees were asked to sign a consent form (Appendix 2). The semi-structured interview approach was used, and the researcher followed the interview guide (Appendix 3), which was designed to align with the research questions. At all times the interviewees was allowed to express their opinions fully. The interviewees were asked if they would like a copy of the interview transcript, and where requested, a transcript was made available within seven days. This allowed the interviewees the opportunity to retract any information provided, while it was still fresh to recall. The interviewees were asked if they would like to participate in the validation of RQ 2 and their preference was recorded. The status of the interviews (previous and planned) can be seen in Table 3.

Table 3: Status of Interview Process

	Number	Transcripted	Paper
Pilot interviews held	5	Yes	3
Interviews planned	6	No	4
Interviews to be scheduled	23	No	4
Total Interviews	**34**		

2.4 Interview Guide Changes and use of Pilot Data

During the course of the interviews, the researcher observed two minor changes have been made to the interview guide to best facilitate the flow of the interview. The first minor change was observed during the initial interviews, a section outlining the approach to the interview questions and the number of projects to be discussed needed to be outlined. This was achieved by inserting a new section 4: Discuss the approach to the interview and its required topic (see, appendix 3, section 4). The second minor change was the moving of three prompts from section 5b to section 6a as this aided in the flow of the interview questions and avoided duplication of discussion (see, appendix 3, sections 5 and 6).

Holloway (1997) discusses that in a qualitative study separate pilot studies are not necessary. Furthermore, he gives the example of a qualitative interviewer conducting 15 focus group interviews, where the interviewer will listen to the recordings or read the transcripts of the first four or five in order to improve the questions or approach to the study. Moreover, this allows the interviewer to introduce new issues into the group interview or even to add new topics, although there is no specific pilot study, analysis of the earlier focus groups may help improve the later ones. Van Teijlingen and Hundley (2001) argue for the importance of pilot studies where it can be a pretesting or a 'trying out' of a particular research approach. The researcher has stated that two minor changes have been made during the piloting phase, these change aided in the flow of the interview and did not affect or change the approach or the data being collected. Therefore, the researcher will adapt the approach of Holloway (1997) and include the data gathered during pilot phase in this research study, as there is no alteration in the approach or to the data being gathered in the proceeding interviews.

3.0 Data Analysis

This section outlines the approach taken by the researcher in the data analysis and discusses the methodology used in reading and summarising the themes identified in the transcribed interviews. Finally, it presents the analysed data, as aligned with the five-step reaction model's themes.

3.1 Approach to Data Analysis

Paper 2 outlines the qualitative data analysis approach for conducting the research. The approach identified Sarantakos's (1998) five-step approach specifically for qualitative

interview data analysis. Step 1 (Transcribing Audio Video Files): all five interviews were transcribed, verbatim, from the recordings. Step 2 (Checking and Editing the Transcript Data): Gilbert (1993) argues that transcripts are prone to human error; therefore, the researcher ensured the accuracy of the transcripts by listening to the audio recordings and reading the transcribed texts simultaneously. Step 3 (Analysing and Interpreting the Data): Boyatzis's (1998, p. 44) thematic analysis data-driven approach was used for the analysis and interpretation of the qualitative data (see, Table 4 for the approach). Step 4 (Explanation of the Findings), and Step 5 (Verification of the Findings).

Table 4: Thematic Analysis – Data-driven Approach

Step 1	1. Decide on the sampling and design issues
	2. Select the subsamples
Step 2	1. Reduce the raw information
	2. Identify the themes within the subsamples
	3. Compare the themes across the subsamples
	4. Create a code
	5. Determine the reliability
Step 3	1. Apply the code to the remaining raw information
	2. Determine the validity
	3. Interpret the results

Source: Adapted from Boyatzis (1998, p. 44)

Following the recommendation of Hoover and Koerber (2011), the qualitative analysis tool NVivo was used to assist in the data analysis process, as it has the best balance of power and ease of use. As identified in the conceptual framework (Paper 1, section 3), this research study adopts the five-phase emergency and crisis reaction model of trigger/signal identification, mitigation effort, response, recovery and learning (Boisvert and Moore, 2003; Pearson and Mitroff, 1993). Moreover, the interview guide for the semi-structured interview was adapted, to include the five-phase emergency and crisis reaction model's themes (Appendix 3, Interview Guide). This approach enabled the researcher to align the themes and codes during the analysis of the data.

3.2 Reading and Summarising of Codes

Miles and Huberman (1994, p. 56) refer to coding as analysis and describe it as "tags or labels for assigning units of measure to the descriptive or inferential information" collected during the data gathering process. Five interviews were recorded as verbatim audio transcripts (Poland, 1995). The researcher read printouts of all the transcripts in

detail, in order to validate their accuracy and to become fully immersed in the data. The researcher manually colour-coded the transcripts, aligning the coding with the conceptual framework reaction model of trigger/signal identification, mitigation effort, response, recovery and learning (Boisvert and Moore, 2003; Pearson and Mitroff, 1993). This technique aided the identification of samples and subsamples in the initial data reduction process (Boyatzis, 1998). Moreover, the themes were manually colour-coded. This enabled the researcher to easily align the themes in the text and to record notes, where appropriate, prior to uploading the transcripts into NVivo for full analysis (see, Appendix 4, Step 1).

At the recommendation of Hoover and Koerber (2011), after completing the initial highlighting for the data reduction process, the researcher uploaded the data and coded it using NVivo. The five reaction themes of trigger/signal identification, mitigation effort, response, recovery and learning, as highlighted in the initial data reduction process, were set as the parent nodes (see, Appendix 4, Step 2). The identification of qualifying key phrases enabled the researcher in the coding process. Within each node, sub-nodes (where NVivo refers to codes as nodes) were identified and recorded in the node structure identifying variation in the node itself (see, Appendix 4, Step 3 and 4,). This allowed for a deeper analysis and understanding of each sub-node, as well greater insight into the meaning of the data. NVivo enabled the aligning of the interviewee with the nodes and sub-nodes, which allowed for ease of access of the data, in interpreting the findings. The sub-nodes were interpreted by the researcher and many became repetitive (Node Frequency Table in section 3.3). Memo tools in NVivo were used to help to create reflection work. This enabled the researcher to produce an audit trail, thus providing evidence of a systematic approach to the qualitative data analysis (Houghton *et al.*, 2016).

3.3 Data Analysis

The transcribed interviews of the five change agents yielded data that amounted to 29,568 words. After the data reduction and the coding process, 9,372 words of data remained, and these were coded. This data was broken down into the five main reaction model themes. Furthermore, during the secondary data analysis, these 64 sub-codes were identified and referenced 166 times. The following sections provide a breakdown of the data analysis and a tabling of the data aligned.

3.3.1 Trigger/Signal Identification

This theme was represented in all transcripts and was referenced 42 times. A total of 16 sub-codes were identified during the coding process as found in table 5. The top five sub-codes (customer complaints, financial impact, reduction of output, employee work to rule, and internal complaints) account for 71% of all references made. A trigger/signal identification word cloud can be found in Appendix 5.

Table 5: Trigger/Signal Identification Data Analyses

	Name	Files	References
Trigger/Signal Identification		**5**	**42**
1	Customer Complaints	3	12
2	Financial Impact	3	5
3	Reduction in Output	1	5
4	Employee Work to Rule	1	3
5	Internal Complaints	1	3
6	Resistance to Change	1	2
7	Supply Chain Issues	1	2
8	Threat Against Consultant	1	2
9	Confirmed Links to Competitor	1	1
10	Key Process Indicators Not Met	1	1
11	Management Mistake	1	1
12	Political Unrest	1	1
13	Project Delivery Issues	1	1
14	Project Scoping Issues	1	1
15	Rumours Were Heard	1	1
16	Unrealistic Data Analysis	1	1

3.3.2 Mitigation Effort

This theme was represented in all transcripts and was referenced 42 times. A total of 16 sub-codes were identified during the coding process as found in table 6. The top five sub-codes (change project plan, confirm problem, meeting with client to fact find, replace project team member, and ineffective management) account for 55% of all references made. A mitigation effort word cloud can be found in Appendix 6.

Table 6: Mitigation Effort Data Analyses

	Name	Files	References
Mitigation Effort		**5**	**42**
1	Change Project Plan	4	6
2	Confirm Problem	3	5
3	Meeting With Client to Fact Find	3	5
4	Replace Project Team Member	2	4
5	Ineffective Management	3	3
6	Acknowledge Problem	2	3
7	Production Problem	1	3
8	Project Team Restructure	3	3
9	Change Working Hours	1	2
10	Confirm Ineffective Approach	1	2
11	Assessment of Processes	1	1
12	Cross -functional Team	1	1
13	Data Analysis	1	1
14	Organisation Structure Assessment	1	1
15	Software Tools Assessment	1	1
16	Staff Skills Assessment	1	1

3.3.3 Response

This theme was represented in all transcripts and was referenced 28 times. A total of 14 sub-codes were identified during the coding process as found in table 7. The top five sub-codes (change process assessment activities, removal of manager, minimise project impact, change people's behaviour, and data analysis) account for 61% of all references made. A response word cloud can be found in Appendix 7.

Table 7: Response Data Analyses

	Name	Files	References
Response		**5**	**28**
1	Process Assessment Activities	2	6
2	Removal of Manager	2	4
3	Minimise Project Impact	2	3
4	Change People's Behaviour	2	2
5	Data Analysis	2	2
6	Establish a Baseline	1	2
7	Redefine Project Deliverables	1	2
8	Acceptance of Responsibility	1	1
9	Change Operational Working Hours	1	1
10	Change Project Team	1	1
11	Change Project Working Hours	1	1
12	Escalate to Company MD or Owner	1	1
13	Handover of Activities	1	1
14	Increase Project Team Personnel	1	1

3.3.4 Recovery

This theme was represented in all transcripts and was referenced 34 times. A total of nine sub-codes were identified during the coding process as found in table 8. The top five sub-codes (communication plan to gain agreement, gain client confidence, implement change in working hours, agree project closure or outcome activities, and implementation of restructured teams) account for 77% of all references made. A recovery word cloud can be found in Appendix 8.

Table 8: Recovery Data Analyses

	Name	Files	References
Recovery		**5**	**34**
1	Communication Plan to Gain Agreement	3	7
2	Gain Client Confidence	3	7
3	Implement Change in Working Hours	1	5
4	Agree Project Closure or Outcome Activities	2	4
5	Implementation of Restructured Teams	2	3
6	Monitoring of Reports and Performance Indicators	2	3
7	Customer Communication Plan	1	2
8	Implement Incentive Schemes	1	2
9	Enhanced Meeting Schedule	1	1

3.3.5 Learning

This theme was represented in all transcripts and was referenced 20 times. A total of nine sub-codes were identified during the coding process as found in table 9. The top five sub-codes (improve implementation approach, due diligence on data source, failure to understand training population, client involvement as change agents, and enhanced process monitoring) account for 80% of all references made. A learning word cloud can be found in Appendix 9

Table 9: Learning Data Analyses

	Name	Files	References
Learning		**5**	**20**
1	Improve Implementation Approach	2	6
2	Due Diligence on Data Sources	2	4
3	Failure to Understand Training Population	2	4
4	Client Involvement as Change Agents	1	1
5	Enhanced Process Monitoring	1	1
6	Manage Client Perception	1	1
7	Manage Customer Feedback process Carefully	1	1
8	Manage Project Scope Creep	1	1
9	Minimise Human Error through Process Controls	1	1

4.0 Emerging Themes and Findings to Date

This section presents the preliminary findings from the five pilot interviews with the change agents, as indicated in Table 2. The emerging findings indicate that the five-phase reaction model used by Boisvert and Moore (2003) and Pearson and Mitroff (1993) for emergency and crisis reaction model of trigger/signal identification, mitigation effort, response, recovery and learning is an effective model, as it is represented in all five transcripts. This section will discuss this alignment of the initial findings from the pilot study, which will enable the delivery of RQ 1 and RO1 and RO2. The initial findings for RO1 can be seen in section 4.2, while the initial findings for RO2 can be viewed in sections, 4.3, 4.4, 4.5 and 4.5.

RQ1. How do experienced change agents mitigate the impact of an emergency unplanned event in a planned operational change project?

RO1. To identify the emergency unplanned events faced by changed agents during their operational change projects.

RO2. To identify the resolution steps used by the change agents to resolve these emergency unplanned events.

4.1 The Theoretical Model

Section 3.3 (Data Analysis) discusses the initial findings from the pilot study, where 64 sub-codes were aligned with the five-phase reaction model used by Boisvert and Moore (2003) and Pearson and Mitroff (1993). Furthermore, section 3.3 identifies and aligns the 64 sub-codes with each of the model's five phase themes, giving an initial validation of the five phase reaction model approach. However, the number of sub-codes and references dispersed among the model's themes varied. The following section will discuss the preliminary findings, as per the five themes. It should be noted that the data presented in this paper is the initial findings and as themes are discussed; the less-frequent themes will have less data associated with them. This section aligns the sub-codes with the five phase reaction model's themes from the perspective of the pilot study's population.

4.2 Trigger/Signal Identification Themes

This section discusses the main themes as collated during the pilot study process. The top five themes are discussed as per the change agents' experience and the full listing of all themes identified can be seen in Table 5. All 16 themes, as represented in Table 5, are the initial findings for identifying the emergency unplanned events faced by change agents during their operational change projects, as per RO1.

4.2.1 Customer Complaints

Customer complaints was the most prevalent indicator of an emergency unplanned event, with three out of five change agents highlighting this as a key trigger/signal of an emerging problem during their operational change project. During the interviews process, CA2, CA4 and CA5 all discussed emergency unplanned events being triggered by customer complaints. CA2 discussed a software installation project, where the implementation was not being delivered as per the customer's requirements, thus highlighting an emergency unplanned event resulting in HR complaints and an operations manager refusing to continue with the implementation until the issues were resolved.

> We had a huge rejection from the users about the software that was being used and sort of completely unexpectedly, people just stopped using the software. It came as a real surprise to us. The reason it was an emergency is because we started to get HR complaints from the users who were unhappy and stressed by the new software.
> People can become quite fixated in the delivery of projects around just hitting the plan and doing the timeline and stuff. It was only when the operational manager in that area, stood up and said, I'm not prepared to use their software because I've got all of these complaints from my staff. Then something had to be done [CA2].

Additionally, CA4 discussed the emergency unplanned events arising from Very Important Person (VIP) customer complaints, and their impact on their business, which is very focused on service delivery.

> This wasn't a small issue because the customer actually complaining about the BRD because they complained about the process that they are using between our organisation and our customer's VIP customers [CA4].

CA5 discussed an internal operational unplanned event, where the impact of the event led to both internal and external customer complaints.

> So, when the problem happened, there was some delays in the projects of laying cables, to build the substations because they don't have their fleet in place, which affected our, external customers as well. So, we had multiple problems, external customers complained, and internal customer complaint [CA5].

4.2.2 Financial Impact

A number of financial impact examples emerged during the interviewing process. CA1 discussed the loss of two to three days production per month equating to 20 and 30 million pounds.

> The baseline was the previous six months they'd had lost, I think it was two to three days of production every month due to moulds and top zones not being done because production staff had been delayed and not available or were on strike or an industrial action issues had occurred. The impacts was between 20 and 30 million pounds [CA1].

CA2 outlined the impact of an unplanned event during an IT implementation project, causing an immediate effect on the cash flow within the client's organisation.

> The issue that was faced with a client is that they suddenly started to find that, their cash flow was impacted and that they were beginning to get customer complaints. Almost immediately after a change of the work that we did was technically implemented. And they didn't know why [CA2].

On the presentation of financial data to their MD and CEO, CA5 explained the impact of the increased employee costs during a quarterly financial report presentation and the immediate reaction to reduce these rising costs.

> The project has been initiated because an increase in staff cost, from 12% to 19% was presented to the MD. So, our MD and CEO has requested to reduce the percentage and to nominate an outside consultancy to study that. So, the study was about productivity and cost optimization of the staff [CA5].

4.2.3 Reduction of Output

Reduction in outputs can lead to financial losses. CA1 explained that, from his project experience, by walking through the manufacturing process, the backlogs in production were evident, which highlighted the reduction on output.

> I think it was two to three days of production every month due to moulds and top zones not being done because production staff had delayed and [were not] available or were on strike, or there being industrial issues.
> You identify the problems through the numbers. The problem could be validated through the build-up [of] the backlog of material ready to be processed. You could see it by walking through the yard [CA1].

4.2.4 Employee Work to Rule

In normal operations, employee work to rule can have a big impact on operational activities, including the product output. CA1 discussed how a work to rule experience during a change project implementation was an unplanned event and gave rise to an immediate 50% reduction of production output.

> From the work to rule they were only pushing one to two in 36 hours, not two to four in 24 hours [CA1].

4.2.5 Internal Complaints

CA5 outlined the issues that can arise when internal customers refuse to accept a software product due to their non-confidence in its solution delivery.

> At the beginning we got a kick back from the divisions. They didn't accept the plan. So, businesses started to refuse to sign. They started to refuse to go through the user acceptance testing. They refused to take over the project [CA1].

4.3 Mitigation Effort Themes

This section considers the main themes collected during the pilot study process. The top five themes are discussed as per the change agents' experience and the full listing of the themes identified can be seen in Table 6.

4.3.1 Change Project Plan

Changing project plans to mitigate an unplanned event is a common occurrence, as outlined during the pilot interviews. CA1 discussed the adjustment that had to be made when one consultant left the project team: "The impact on the project, I was one person down, I had to extend the project by one man week."

Whereas CA5 outlined the change in a project plan as a result of a change in approach, whereby a new scope was developed and an outside consultancy was employed to deliver the new scope.

> So, what we did, we put the scope together. We have to written a new scope to study the staff productivity and study the value driver of the cost. And the higher cost in the entire division. So, what we have done, basically we started with the consultant. We agreed with them the plan, and the plan was divided into the divisions [CA5]

4.3.2 Confirm Problem

Confirmation that a problem or a potential problem is real is key to any correction process. The change agents' interviews gave a variety of situations for confirming that the problem was genuine. CA1 discussed an event where a decision was made to mitigate a problem using one course of action. However, under deeper investigation into the evidence gathered, the signal identifying the problem was found to be incorrect.

> I explained the situation to him. He confirmed back the action we were taking was correct and he made sure we … contacted the client and the threat was not correct [CA1].

When a signal or trigger of a problem is identified, it is always prudent to investigate the source and validate whether the problem is real, as recommended from the literature (see, Paper 1, section 2.8.1). CA3 and CA5 both recalled examples of this validation process. CA3 outlined the situation following the identification of an emergency unplanned event.

> He pinpointed that the file that had been uploaded to the live production environment was 30 versions old. And, what happened was that the administrator, rather than taking the version that was in the document management system, which is proven and signed off … instead they used a copy from an old email and uploaded it [CA3].

Additionally, CA5 described the approach to validating the signal or trigger of an emergency event.

> We validated those complaints by going in and doing a complete assessment on our fleet and validating and the productivity and the lead times adherence [CA5].

4.3.3 Meeting with Client to Fact Find

Communication in every change management project is a key element to the project's success (Kotter, 2007). CA1 discussed how they had a meeting with their client, agreed the problem source, and then agreed a resolution process to escalate the problem to the board of directors to resolve the issue.

> I dealt with the issue indirectly by speaking to the senior manager in the area and getting him to talk to the board to say we needed to make a change in this situation [CA1].

Where the management team has a vision to be implemented, the teams may require leadership direction to enable the change. CA5 outlined such a situation, where a CEO had to enforce the change process by his leadership.

> So, five Executive Vice Presidents were on the committee, plus the Task Force team and the consultant themselves. So, we've got the buy in from, the EVPs and the chairman was the MD and the CEO. So, whatever instruction is coming from the top, it will be implemented within the division [CA5].

4.3.4 Replace Project Team Member

The key to delivery of a project is having the right project personnel in place (Müller and Turner, 2007). CA3 outlined where he was replacing an existing project manager to complete the project.

> They appointed me and they told the client that unless they changed the team lead the project [would] be finished, finished mid-stream, and they they would have to pay payments, which would have been massively affected. So, with the agreement of the consortium, Asian Development Bank recommended me to come in and take over the job so that was a very big change for a number of people [CA3].

4.3.5 Ineffective Management

In contrast with section 4.2.4 above, this theme refers to the ineffectiveness of the management within the business operation area where the change project is be performed, leading to a removal of the manager due to their ineffectiveness, as outlined by CA5 below.

> The first thing that we have done, we have told our management we will not go there until you remove the manager of the Fleet department because we know that he's the troublemaker. So, the decision was made, he was then removed, and the project was started [CA5].

4.4 Response Themes

This section considers the main themes collected during the pilot study process. The top five themes are discussed as per the change agents' experience and the full listing of all themes identified can be seen in Table 7.

4.4.1 Process Assessment Activities

From the pilot study, it was found that the most popular response activity was process assessment activities. CA2 discussed detailed assessment of activities to analyse the process, as a means of ensuring effectiveness.

> Both the system is performing and [the] users were actually using the system and following the processes. So, we ended up doing a lot of value stream mapping, process mapping of user behaviour with the system. We can actually understand whether the processes that were designed [were] followed, whether the system was performing at the response rates that it was supposed to be, whether the[re were] data issues and so on and so forth [CA2].

Similarly, CA4 outlined, from their experience, the process assessment activities undertaken as part of a process review as a response.

> We looked at the process, looked at the process map within the key account management department. We looked at the management themselves, are they capable to run this department? We looked at the system that they are using and the service level agreement that are between them and even at the KPIs between them and the other divisions [CA4].

4.4.2 Removal of Manager

CA1 and CA5 discussed the importance to the change project of removing the manager responsible for the operational area in which the change project is to be executed. In both projects, the manager was deemed to be a barrier to a successful change project.

> They were looking for a reason to remove him from the position. So, within a week he had resigned from his position [CA1].
>
> The response was to remove what you call the obstacles, which was the manager and reappoint a new manager within the fleet; then implement all the changes that are required under the supervision of the new manager [CA5].

4.4.3 Minimise Project Impact

When an emergency unplanned event occurs during a project, a key activity is to minimise its impact on the project. CA1 and CA3 explained their approach to minimising its impact. CA1 discussed increasing the available working time within the project timelines, in a response to time lost.

> What you did was to increase the available time to complete the project with the exact same period, which is the 18 weeks [CA1].

In contrast, CA3 discussed the importance of stakeholder management during the project manager's transition period.

> I ha[d] to tread carefully. I needed to meet and establish relationships with key people in the Ministry of Energy in terms of taking over the project without causing people in the consortium to lose money or to lose face. In fact, it was all about losing face. [CA3].

4.4.4 Change People's Behaviour

Within a change project, when a new procedure or process is being introduced, the change process must be communicated to the personnel involved, to enable an effective change (Kotter, 2007). CA2 identified the problem when an operations team performs the old procedure on a new system, while CA4 discussed the usage and availability of data in a new system.

> People just weren't following the process. They were doing the old process in the new system and the new system didn't have enough controls of guiding in it to, to, to stop people doing that.
> We looked at the lead time, which had taken the project management office to update the system. And, the people involvement from the different departments, how they are updating the system. I also at the same time … looked at the system itself and the update accuracy of the data and the system [CA4].

4.4.5 Data Analysis

CA5 suggests that data analysis is of crucial importance in a change project, particularly in the response to a mitigating an unplanned event during the implementation phase of the project.

> So, we go to the division individually, we take their staff listed, salaries, all the details about stuff plus if there's any other additional costs coming. Plus, the financial aspect from the finance department related to cost as well. So, the consultant went to the division, for example. We studied the staff costs their productivity, and they have listed some issues that he, the division is facing. These were part of our analysis plan [CA5].

4.5 Recovery Themes

This section discusses the main themes found during the pilot study process. The top five themes are discussed as per the change agents' experience, the full listing of all themes identified can be viewed in table 8.

4.5.1 Communication Plan and Gain Agreement

Kotter (2007) discusses the importance of communicating the vision. Similarly, when an emergency unplanned event occurs, the vision forward needs agreement and a communication plan. CA2 and CA5 discussed contrasting approaches to developing a communication plan and gaining agreement. CA2 proposed the development of a communication and an agreement plan directly with the client. However, CA5 took an agile approach through facilitating a workshop to identify and resolve all issues.

> The next stage is a communication plan development with both parties, trying to get some degree of agreement with that, by both the management and the users [CA2].
> We brought all the people in, the internal team and the vendor. We sat together, we discussed all the issues and we uh, started to tackle every single issue and solve it within the workshop. We do not wait, so we solved all the issues during the workshop [CA5].

4.5.2 Gain Client Confidence

From a project team's perspective, gaining the confidence of the customer is of utmost importance. Additionally, when an unplanned emergency event happens within the change plan, it can lead to a project confidence issue with the customer. CA3 outlined, from their experience, the process they used to recover the client's confidence.

> Frankly, a degree of anger needs to be managed; we had to get the client to calm down. We … and they had a look at [it] objectively and then we agreed to work collectively. And I think, again, one of the main issues was we [hadn't] really worked enough. They [hadn't] been engaged enough and we [hadn't] pushed enough to get the change leadership in place as well [CA3].

4.5.3 Implement Change in Working Hours

In response to an emergency unplanned event, CA1 explained their effort to change the working hours of the staff from a normal shift rotation to a 24-hour continental shift pattern. This action compensated for the emergency unplanned event and reduced the last production time in the operation.

> The first time it happened, we lost one day's worth of production after that. It was within hours, but that was a shift change in the business to have people working under different rules and regulations on a 24-hour continental shift; there [were] restrictions for the staff, but they agreed that's what they wanted and they were happy with it [CA1].

4.5.4 Agree Project Closure or Outcome Activities

CA3 discussed a complete change in scope of the change project due to unforeseen circumstances, where the client instructed the project team to suspend the project and make safe all works completed to date.

> In the substations, the switchgear was left open. We had to seal the doors of the substations. That took a number of months. Let us say we finished out the work, we had come to a point in time where we had nothing more left to do [CA3].

4.5.5 Implementation of Restructured Teams

Both CA1 and CA5 discussed contrasting situations where the project team required restructuring, as a result of an emergency unplanned event. CA1 explained the realignment of resources to incorporate the mitigation effort into the project's team scope and to continue with the project.

> The recovery was fairly straightforward. We changed the focus and swapped the people around to minimise the impact [CA1].

However, CA5 discussed the change of the project approach by engaging experts with required skills into the project team, to enable the completion of the project scope.

> We ha[d] to change the approach; we put a plan together. We recruited international expertise with 25 plus years of experience. And, [we] went through all the initiative[s], one by one [CA5].

4.6 Learning Themes

This section discusses the main themes collected during the pilot study process. The top five themes are discussed as per the change agents' experience and the full listing of all themes identified can be seen in Table 9. Pearson and Mitroff (1993) discuss learning as an approach that requires adequate and critical analysis from the lessons learnt from the teams/personnel whom experience the event.

4.6.1 Improve Implementation Approach

CA2 reflected on the lessons learnt from their approach to the project implementation, which led to the emergency unplanned event occurring. Moreover, this participant outlined the level of dissatisfaction on the client's side.

> I think we had to acknowledge that there were improvements that needed to be made. We never went into it thinking that we weren't going to have to do some of these changes, but I don't think we ever anticipated the strength of the response that we were getting [CA2].

CA5 discussed the lack of skilled personnel made available to the project from the operational team and how this involvement could be managed in the future.

> At the beginning, we didn't establish the right team members; we didn't have the right team members from the business side. So, what we [do], before we go into any project, we categorise the skills that we require from the business to assign their teams. So, this is one of the biggest change[s] that we have [made] in our, projects [CA2].

4.6.2 Due Diligence on Data Sources

Having valid data to make decisions is key to the success of all projects. CA1 outlined this point from their experience. Similarly, CA4 discussed the intervention of their MD, requesting the operational teams to present factual data.

> Doing effective due diligence on the project, then the prepared of data and source of information, will allow you to validate it rather than [to] try… to do it all in one go and be surprised by it [CA1].
>
> So, the communication was with the MD and he was telling the businesses not to over exaggerate the numbers [but] to keep the numbers factual [CA4].

4.6.3 Failure to Understand Training Population

When implementing a new process, where training is required to upskill the operational staff, knowing the training population and their capabilities is key to successful delivery. CA2 remarked on their different experience with the same material on the same change process, but with two different training populations: one was a success, while the other was initially a failure.

> They did the training. And we had a completely different experience. So, you know, the same project, same approach different but a mentality on stuff and it was a success. So, I think we'd failed to understand the people that we were training [CA2].

4.6.4 Client Involvement as Change Agents

Client involvement in change project is crucial for gaining experience and getting their acceptance of the new process or product being introduced. CA2 compared two implantations of the same product in two different locations – one with client involvement and the other without.

> They were reliant on us, as the project team, to be the change agents, with no change agents from the client's side. But ultimately, the implantation team struggles for this to work. Now the counter to that is, this happened in a Scotland. When we did the same implementation in Wales, the Scottish team were involved as change agents, which worked out well [CA2].

4.6.5 Enhanced Process Monitoring

Within key processes, controls are very important to ensure successful management of the process outputs, which identifies the effectiveness of the process. CA2 discussed the emergency event that occurred due to a lack of process controls.

> You'd hope there'd be more process control and process monitoring controls around – the likes of software updates – to stop things like this from happening. But at the time, you need to have to go through and put some of those controls in, put some of those checks and additional checkpoints and approvals. I think that making sure controls are followed quickly and timely, so people aren't just pasting information into a system, which is not correct [CA2].

5.0 Developing Good Practice Models

Talwar (1993) discusses the importance of organisations using business re-engineering techniques to enhance their performance. Research from the USA suggests that the approach to re-engineering generally falls into two categories: (1) "Those who have reached crisis point – recognising that their ability to succeed in spite of themselves has run out"; and (2) "Those who are already successfully outperforming their sector" (Talwar, 1993, p.22). Reijers and Mansar (2005) discuss 15 frameworks and business

process analysis models that are available from the literature. In addition, they present an approach to business process redesign as being gained from experience within large multinational organisations and by consultancy firms through business process redesign engagements. Moreover, they suggest seven themes by which business process redesign best practice initiatives can be aligned, as per Table 10.

Table 10: Best Practice Alignment – Business Process Redesign

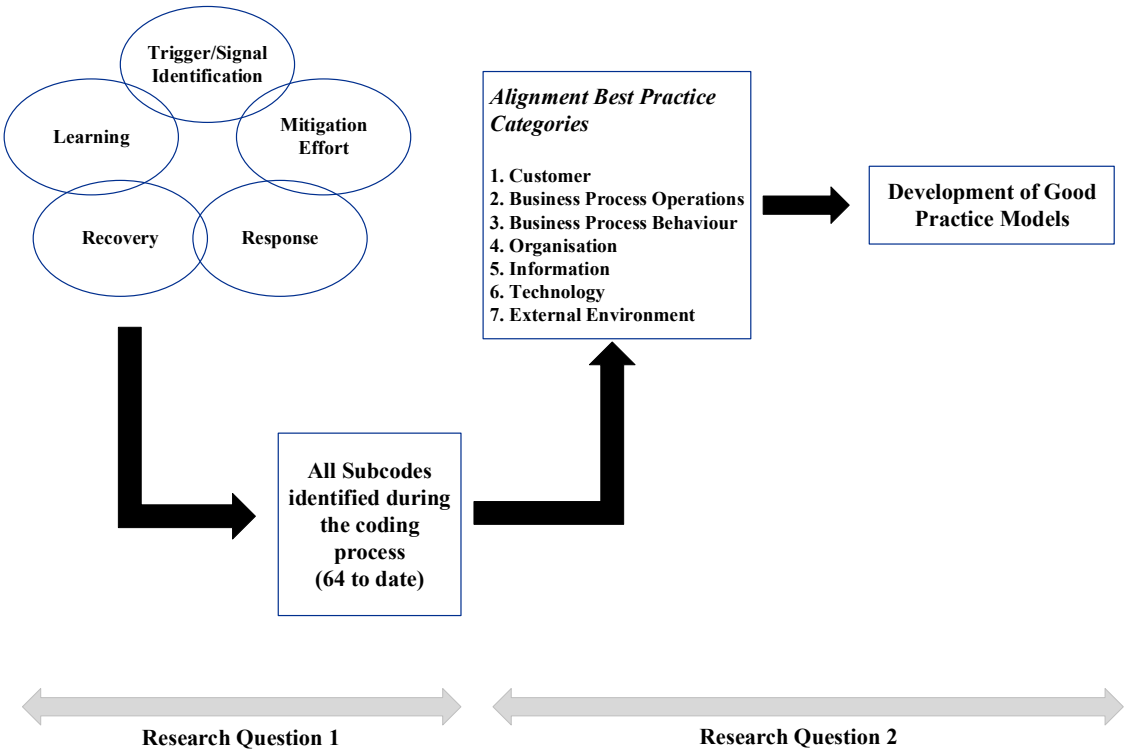
Customer	Which focuses on improving contact with customers.
Business Process Operation	Which focuses on how to improve the workflow.
Business Process Behaviour	Which focuses on when the workflow is executed.
Organisation	Which considers both the structure of the organisation (mostly the allocated resources) and the resources involved (types and numbers).
Information	Which describes best practices related to the information the business process uses, creates, may use, or may create.
Technology	Which describes best practices related to the technology the business process uses or may use.
External Environment	Which tries to improve upon the collaboration and communication with the third parties.

Source: Adapted from Reijers and Mansar (2005, p.295)

The researcher, following the literature from Talwar (1993) and utilising the seven themes of business process redesign best practice initiatives by Reijers and Mansar (2005), has formulated the development of a good practice model. The model in Figure 2, below, aligns the five themes from the research's conceptual framework in Paper 1 and the sub-codes, as identified during the data analysis secondary coding. The output from the coding process will then be filtered through the seven categories, as identified by Reijers and Mansar (2005). This approach will lead to clear categorisation of the themes and can be aligned with the five main reaction model themes. Through this process, the researcher will be able to develop a good practice model from the data generated during the research, as per Figure 2 below. The researcher will use the proposed model to deliver RO2b, i.e., develop a model identifying the resolution steps used by change agents to resolve emergency unplanned events. Additionally, to answer RQ2, the researcher will develop a

good practice model from the change agent's perspective on how best to mitigate an emergency unplanned event in a planned operational change project.

Figure 2: Development of Good Practice Models

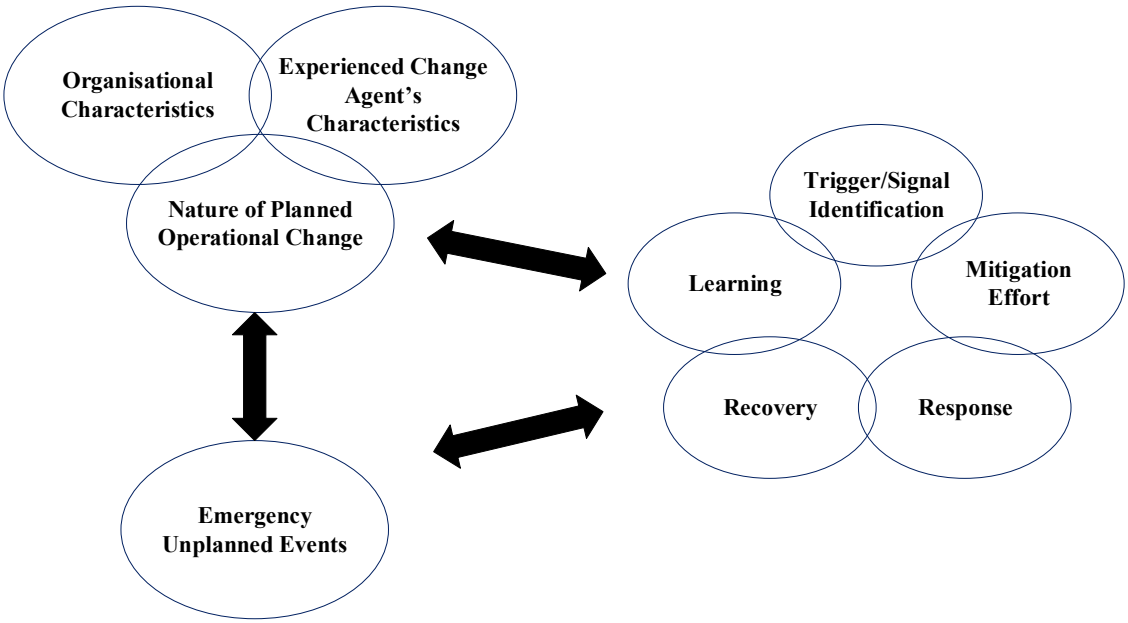


Source: Developed for this Research

6.0 Conceptual Framework Revisited

During the piloting process, the researcher has reassessed the conceptual framework, as presented in paper 1, and recommends the removal of the event trigger/signal, which is aligned with emergency unplanned events as in practice this step is repeated. Within the five-step model, which is a combination of both Boisvert and Moore (2003), Pearson, and Mitroff (1993) models, trigger/signal identification is the initial step in this model. Therefore, the researcher suggests the removal of the event trigger/signal, which is aligned with the emergency unplanned events from the framework and recommends a revised conceptual framework, as per Figure 3 below.

Figure 3: Conceptual Framework Realigned



Source: Developed for This Research

7.0 Ethical Considerations

In conducting research, the researcher must be conscious of any ethical implications that may arise in terms of obtaining consent from the participants; and in ensuring anonymity and confidentiality, full disclosure on the research topic and background, gaining informed consent, ensuring accuracy of reporting, and abiding by academic protocols for research (see, Table 2: Ethics Framework, Paper 2). All the above points were adhered to during the piloting process. Furthermore, ethical approval for this research was granted by WIT School of Business' Ethics Committee on 21 May 2019 (Appendix 10).

8.0 Concluding Remarks and Next Steps

This paper is limited to the analysis of five interviewees, through 64 sub-codes identified in the data analysis. As is evident in section 3, data saturation has not been reached and further interviews are required (Patton, 2015; Collins and Hussey, 2014; Creswell, 2009). The purposeful sampling strategy used proved to be appropriate with the population selected to-date yielding ample pertinent data, see, table 2 above (Patton, 2015). The researcher will continue to recruit participants in this research, as per the strategy of the pilot study. The data collection process, data analysis and presentation have been assessed for effectiveness of approach and were deemed appropriate.

The data in the study to date has revealed a number of themes that are aligned with the reaction model steps. The researcher will align all identified themes with Reijers and Mansar's (2005) seven categories of best practice alignment, as per Figure 2. This approach will ensure guidance in good practice categories and will align with the model developed.

The conceptual framework has been updated, as per Figure 3, where it was deemed that the removal of the event trigger/signal step, which is aligned with the emergency unplanned events, is not required and removed, as the reaction model contains an event trigger/signal identification step.

The next steps for the researcher will be to continue the interview process with the purposeful sampling, as per Table 3. From the data generated in the pilot study, it is evident that a deeper analysis and understanding is required, which will be presented in Paper 4. The early stage analysis has identified a number of themes that will be explored as the research progresses. The researcher anticipated the refinement of analysed data to date, and future data gathering will generate an insight into the research questions, which may help with further understanding and guidance in dealing with emergency unplanned events in a change plan in the future.

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10.0 Appendices

Appendix 1: Information Sheet – DBA Thesis

Researcher's name: Edmond Walshe

Project title: *Exploring the processes used by experienced change agents to mitigate the impact of an emergency unplanned event in a planned operational change project.*

What is the purpose of this research?

This study aims to answer to research objectives:

RO1. *To identify the processes used by experienced change agents to mitigate the impact of an emergency unplanned event in a planned operational change project.*

RO2. *To develop a best practice model from the change agent's perspective on how best to mitigate an emergency unplanned event in a planned operational change project.*

Why am I being asked to participate?

As this study seeks to understand how experienced change agents reduce the impact of emergency unplanned events in a change operational plan, I would identify you as an experienced change agent, having more than 5 years' experience managing change projects. During these years, you will have come across emergency unplanned events and this will be the core of our discussion.

Do I have to participate?

No, participation is entirely voluntary. If you choose to participate, you will be asked to sign an informed consent form (see, attached/below). If the participation is through a video conference call, the call will be recorded, and verbal informed consent will be gained at the start of the confirmation (as per attached/below).

What would participation in the study mean for me?

Participating in the study will require you to be available for an interview either in person or through video call. It will take approximately one hour, and your consent will be requested to have the interview recorded. Participating in this study will enable the researcher to build on the current literature of mitigating emergency unplanned events in an operational change plan and participate in the development of a 'good practice model'.

What are the benefits of participating?

The study seeks to enhance the current body of knowledge and literature on mitigation of unplanned emergency events in operational change projects. There are no financial

incentives for this study. The benefits to participation enables the researcher to achieve this contribution.

What are the risks associated with participating?

The risks associated with participating in the study relate to personal data protection. To ensure data confidentiality and protection, the researcher proposes to assign a code for each participant, and both sets of data will be recorded in an Excel password-enabled file on a standalone laptop. All interviews will be digitised, and their transcripts will be stored on the standalone laptop. Backup files will be maintained on a secure, external hard drive. This process ensures data confidentiality.

Can I withdraw at any point?

Yes, you may withdraw at any point and have any data you provided destroyed, at your request.

How will the data be gathered, managed and used in the study?

Data will be gathered through the recording and transcription of the interviews. To ensure data confidentiality and protection, the researcher proposes to assign a code for each participant, and both sets of data will be recorded in an Excel password-enabled file on a standalone laptop. All interviews will be digitised, and their transcripts will be stored on the standalone laptop. Backup files will be maintained on a secure external hard drive. All data will be destroyed after five years of completion of the study

Can I verify aspects of the work and view a summary of the findings?

Yes, in the interview guide, an option to receive a transcript of the interview is a key question (section 1h). In Research Objective 2, to develop a good practice model from the change agent's perspective on how best to mitigate an emergency unplanned event in a planned operational change project, the participants will be sent a copy of the proposed model. They will be asked for their opinion on the 'good practice model' developed after the interviews have been conducted.

Appendix 2: DBA Consent Form

I have read and understood the information sheet provided and by choosing to give consent:

(Please tick the box)

1) I am voluntarily participating in this study. ☐

2) I grant permission for you to record my interview. ☐

3) I understand that I can withdraw from the study at any point. ☐

4) I understand that my own and my organisation's details will be anonymised. ☐

5) I understand that the anonymised data will be cited in the thesis and other publications. ☐

Signature

Participant _____ Date _____

Researcher _____ Date _____

Edmond Walshe (20074625)

Appendix 3: Interview Guide

7. Informed Consent from Interviewee

j. Outline of research question and objectives of research.

k. Overview of data to be collected.

l. Outline the interview data storage protocols.

m. Discuss data confidentiality and anonymity in analysis.

n. Duration of interview is approximately one hour.

o. The interview will be recorded.

p. Does the interviewee consent to continuing with the interview? Yes or No?

q. A transcript of the interview will be made available to the interviewee if required. Is it required? Yes or No?

r. Does the interviewee consent to be contactable in the future with regard to this research? **Yes or No?**

8. Background Information on Interviewee

h. Name of interviewee.

i. Level of education.

Prompt: Third level and professional qualifications.

j. Number of years' work experience.

k. Number of years' experience as a change agent.

l. Current title of interviewee.

m. Number and type of change projects participated in.

n. Are you a consultant (internal or external)

9. Background Information on Organisation

e. Type of organisation (multinational, national, etc.).

f. Industry type (manufacturing, service, financial, etc.).

g. Number of employees within the organisation.

h. Number of years participant has worked with the organisation.

10. Discuss the approach to the interview and its required topic

a. Explain the requirements for the emergency aspects in the projects for discussion

b. Three to four examples is a requirement, if possible

11. Background to the Change Projects under Discussion

c. Can you describe the change projects you have done in your organisation?
Prompting towards change projects and their outcome.

d. Can you give a brief description of the change project under discussion that matches the criteria for the research?

Prompts

- *Type of project (process/technology/people).*
- *What was the project team structure?*
- *What was the experience of the team members involved?*
- *What initiated the project (customer/productivity, etc.)?*

12. Mitigation Questions on the Change Project under Discussion

g. Within all change project unplanned events do occur. Have you experienced such a problem in your projects?
Prompt: emergency is an abnormal situation requiring prompt action outside normal operational procedures, in order to limit damage to employees, property, or environment.

- *Can you describe how the problem was first detected?*
- *How did you know the problem was real?*
- *Can you describe how the problem was resolved?*

h. Trigger/signal identification
Prompts:

- *Scanning for signals:*
  - *How did you know something was wrong? (Human or technology)?*
- *Signal capture:*
  - *What initiated the problem? (Human or technology)*
  - *How did you validate that the problem was real?*
  - *During the validation of the problem how detailed was the assessment?*
- *Signal transmission:*
  - *Once you identified the problem, what happened next to mitigate the problem?*
  - *How was it communicated?*

i. Mitigation of effort

How did you deal with the problem?

How was this plan developed?

j. Response

What was the response approach?

Was it damage limitation/containment or was it to follow existing organisational procedures?

k. Recovery

Was there a communication plan, if so how and to whom was it delivered?

What was the plan to minimise the impact of the problem?

Was there prioritisation of activities in the recovery, if so why?

l. Learning

How do you or your organisation minimise the reoccurrence of the problem?

How was this experience used within your organisation?

13. Closing Remarks

- Thank the interviewee for their participation.
- Ask for feedback on the flow of the interview and the questions asked. Make a note of comments given.
- Confirm the availability of the transcript and change process, if required.
- Ensure that contact details are shared for transcript review.

Appendix 4: Data analysis steps

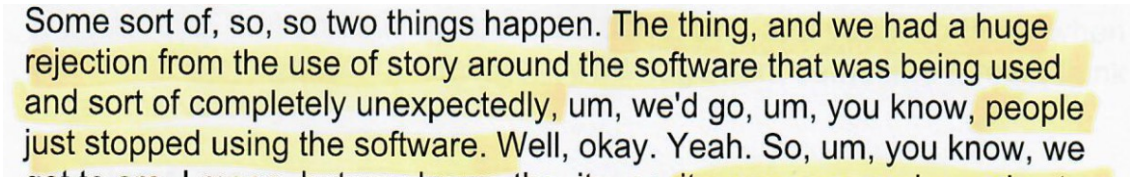
Step 1

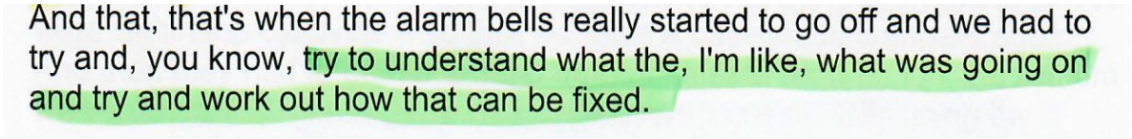
Once the interviews are completed and transcribed the themes from the five-phase emergency and crisis mitigation model of trigger/signal identification, mitigation effort, response, recovery and learning were identified in the transcripts and colour coded manually using the colour codes below (Boisvert and Moore, 2003; Pearson and Mitroff, 1993).

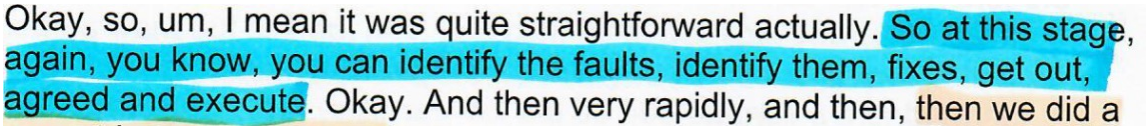
Colour Code for Themes

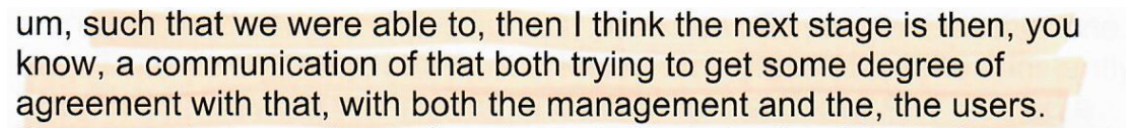
Trigger/Signal Identification	
Mitigation Effort	
Response	
Recovery	
Learning	

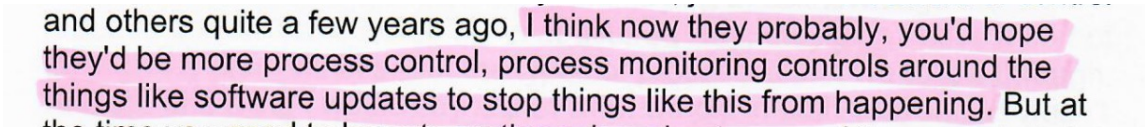
Examples of within text coding of themes:





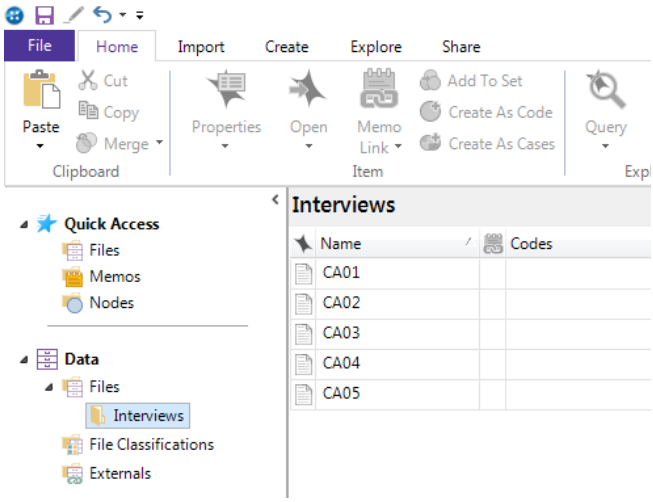




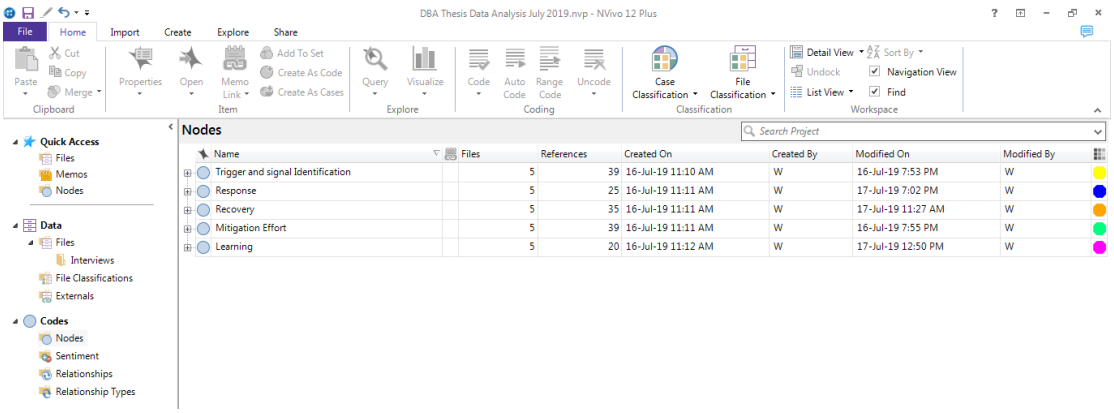


Step 2

Upload the transcripts to NVivo. Each interviewee was assigned a code (CA) and a number that equates to the sequence of the interviews.

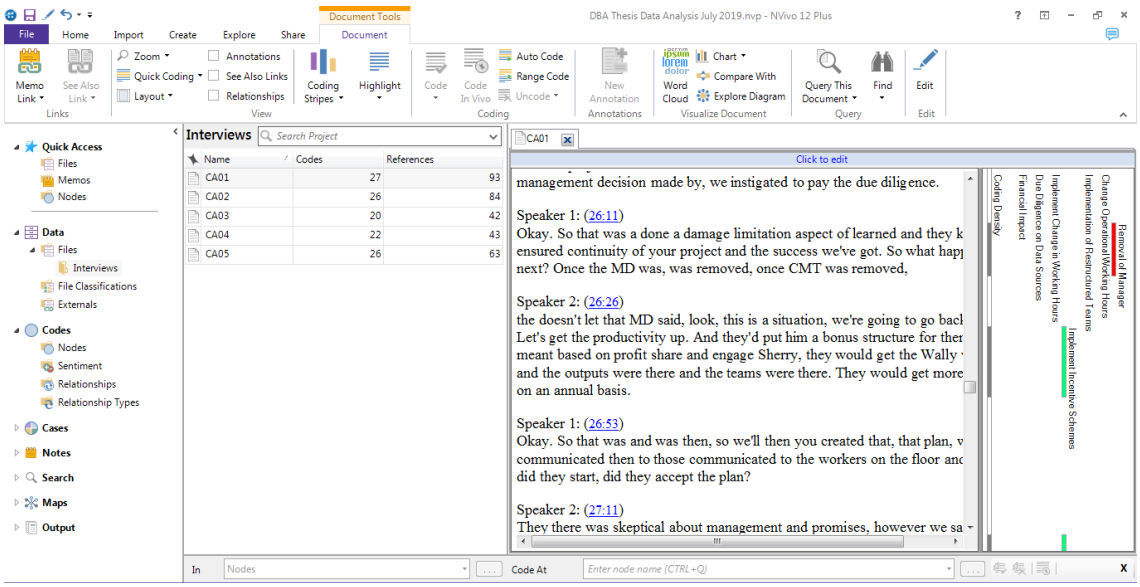


The researcher repeated the exercise of step 1, identification of the five theme in NVivo and assigning a colour code.



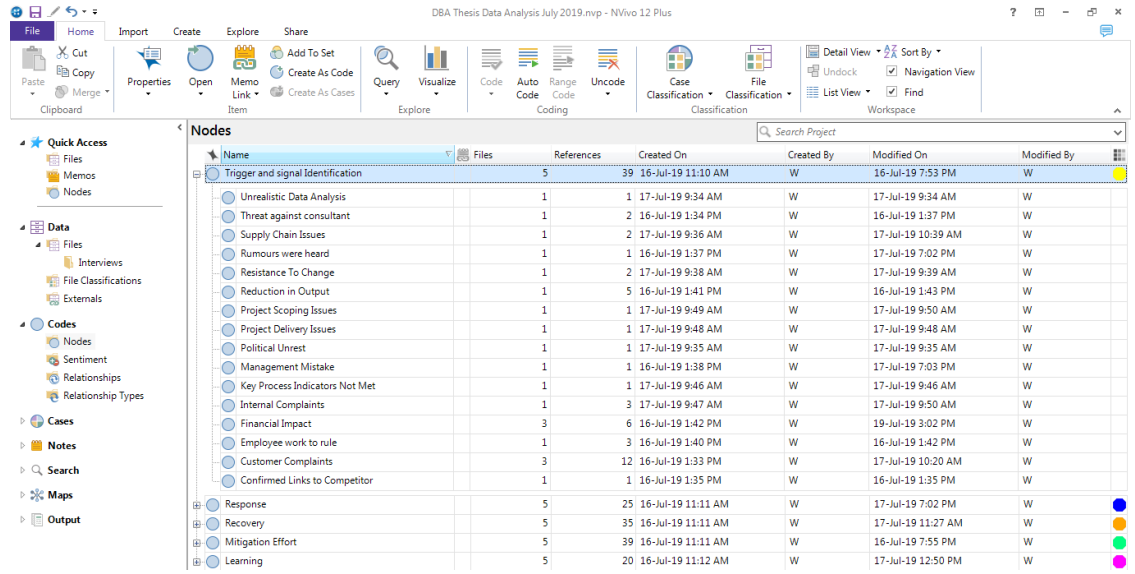
Step 3

The researcher read the transcripts again, focusing on the identified five themed areas of the transcripts identifying sub codes for each of the five themes. The table below illustrates the coding alignment technique used where the transcripts are aligned with the themes and sub codes.



Step 4

The initial sub codes for the five themes were identified, but the quantification and analysis is limited to the initial five interviews.



Appendix 5: Trigger/Signal Identification Word Cloud

Appendix 6: Mitigation Effort Word Cloud

Appendix 7: Response Word Cloud

Appendix 8: Recovery Word Cloud

Appendix 9: Learning Word Cloud

Appendix 10: Ethical Approval

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May 21st, 2019

Dear Edmund,

Thank you for your application for ethical approval for your proposed project titled, *'Exploring the processes used by experienced change agents to mitigate the impact of an emergency unplanned event in a planned operational change project'.*

The Committee has reviewed your **School of Business Ethical Review Form** and are satisfied to approve your application.

The following minor observations were noted which you may wish to action in consultation with your supervisors:

Section B: While you have indicated that your project has not been assessed for GDPR compliance, the Committee recommend that ensure that your work aligns with GDPR legislation.

Section B: You have kindly included a publication agreement with your application. This needs to be amended in question 13, section B.

There are some minor typographical errors in the information sheet (questions 5, 9), the consent form (question 5) and interview guide (1h, 5e).

We wish you well with your study

Kindest regards

Denis Harrington

Chair, School of Business Ethics Committee

PAPER 4

Examined on the 24th April 2020

PREFACE

The researcher presented Paper 4 to the examiners on 23 April 2020. The paper was recommended with minor comments that needed to be addressed.

The first comment from the examiners was as follows:

> On the research questions and objectives, I would suggest that you revisit these. They don't serve you well and look contrived. You simply need 3 research propositions or statements. If you do that you can much more easily relate back from your findings with a stronger, more focused narrative. You need to say more on reliability.

The researcher appreciated the examiners' comment and removed RQ2 and RO3 from the paper. He also added further information on reliability to Section 2.5.1, as recommended.

The second comment was as follows:

> The approach to analysis is good. I love manual coding and the use of colour coding. Be sure to cross reference to how the categories were derived. Remember that when you read the transcripts you are engaged in first cut analysis. Categories emerge at this stage and these are really rich. Try to consider protecting the integrity of these in your narrative. When you switch into NVivo something is lost. It becomes content counting.in your narrative therefore try to recognise what might be lost and how your rich interpretation that preceded that stage has influenced NVivo nodes.

The researcher responded positively to this point from the examiners, updating Section 4.0 and incorporating their suggestions. The narrative now includes the approach on data reduction in NVivo and how the researcher maintained the rich data in the sub-codes. The researcher acknowledges that some of the data rich input from the interviewee can be lost, however rich interpretation that preceded this stage has influenced NVivo nodes and sub nodes resulting in 71 activities identified by change agents.

The third comment was as follows:

> Provide some more operational details on the Pareto approach. The reader needs to do a bit of work to imagine the specific criteria when it comes to deciding on the cut-off point. The Pareto Approach is not well explained at all. It needs much more

> development in this chapter. At a higher level I would have some anxiety about its use. If anything you need to accept that you are making reasoned judgement calls on the issues that you will consider in your use of Pareto. It seems to me that its use brings into question the overriding consideration that is central to qualitative analysis and that is that 'the general resides in the particular.' Your use of the Pareto Approach casts aside the particular. You need to address and recognise this flaw.

The researcher very much appreciated the examiners' comment and removed the Pareto approach from this paper, as suggested. He also updated Section 2.3.3 with the alignment approach and changed the data tables to reflect the removal of the Pareto method.

Viva Examiners' Comments:

There is something needed to map from here – in terms of the categories – to what has been used in the revised conceptual framework (p.169)/final model and how this was done.

To facilitate a clear user experience of the mitigation steps and activity matrix, the researcher aligned the mitigation steps and activity with the best practice alignment categories of Reijers and Mansar (2005). To enable the alignment, the researcher combined the categories of Information and Technology with Operations. Furthermore, he replaced the category of Organisation with Project. The model originally produced for application at an organisational level, is now adapted with the six categories of Projects, Operations, Personnel, Customer, Behaviours and External Influences which is more appropriate to the alignment of the mitigation steps and activities in a change project.

The combination of the pilot study of five participants and the 24 participants results in the total population of 29 participants. Isn't this a sample of 29 participants? Please clarify this.

The researcher would like to clarify a total of 29 participants took place in this study. Five participants took part in the initial data gathering phase (paper 3) with 24 taking part in the secondary data gathering phase (paper 4). That is a total sample of 29.

Paper 4: Findings

ABSTRACT

This research findings and discussion paper presents the researcher's findings from the 29 interviews undertaken with experienced change agents. The researcher followed the guidance of Patton (2015), suggesting a purposeful sampling strategy to be used, as the interviewees were selected due to their years of experience, and their experience in change projects and skills sets. The data gathered during the interviews is aligned with the five-step conceptual framework/theoretical model of trigger/signal identification, mitigation effort, response, recovery and learning (Boisvert and Moore, 2003; Pearson and Mitroff, 1993). Moreover, this initial identification of the main themes was achieved through manual colour coding during the review of the transcripts. The researcher used NVivo software as the data analysis tool. The emerging resolution steps and activities are further aligned with the best practice alignment model for business process redesign (Reijers and Mansar, 2005), resulting in a matrix aligning the findings with the resolution steps and best practice categories. This alignment achieves a greater understanding and categorisation to the resolution steps. The adherence to the theoretical model is discussed in detail. Moreover, the researcher identifies and discusses activities which occur in more than one activity, justifying their inclusion. The conceptual framework/theoretical model has been revisited post findings and presented in this paper.

1.0 Introduction

This paper presents the findings from an exploratory study to identify the processes used by experienced change agents to mitigate the impact of an emergency unplanned event in a planned operational change project. To answer the research question and objectives (outlined below), the researcher has identified a five-step reaction model, which is a combination of the models offered by Boisvert and Moore (2003), and Pearson and Mitroff (1993), see, paper 1, section 2.8. In the development of this investigation, the researcher has attempted to describe the major concepts that are likely to be encountered. It is anticipated that the change reaction model selected will guide the researcher in addressing the following research questions of the study.

RQ1. How do experienced change agents mitigate the impact of an emergency unplanned event in a planned operational change project?

RO1. To identify the emergency unplanned events faced by change agents during their operational change projects.

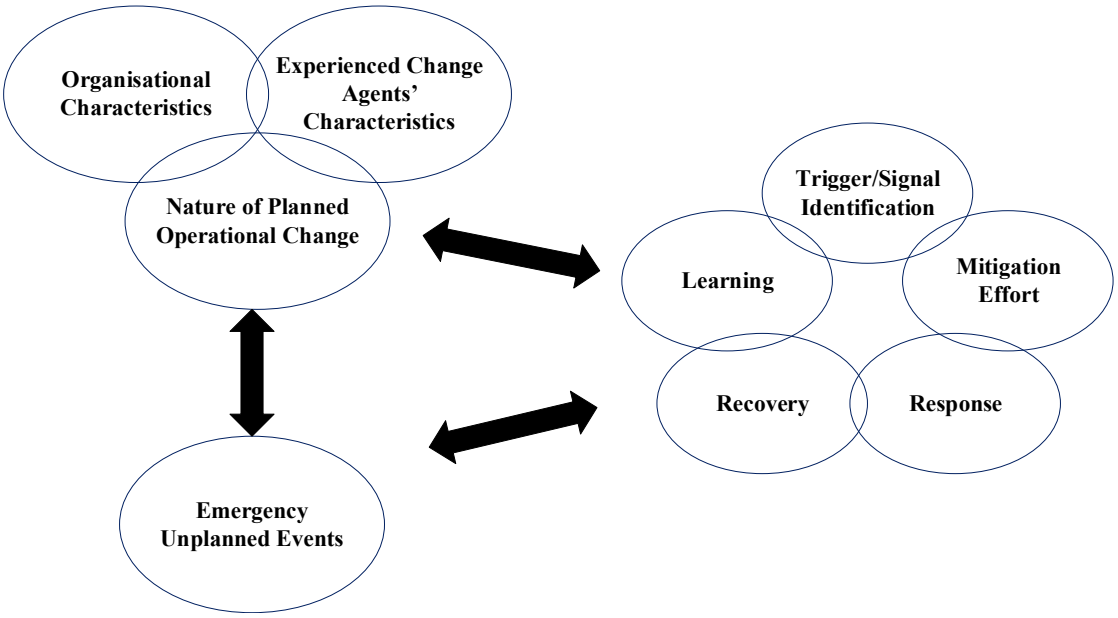
RO2a. To identify the resolution steps used by the change agents to resolve these emergency unplanned events.

RO2b. To identify the activities conducted by change agents in each resolution step to resolve emergency unplanned events.

1.1 Theoretical and Methodological Underpinnings

Paper 1 derived a conceptual framework which incorporated the five-phase emergency and crisis mitigation model proposed by Pearson and Mitroff (1993) and Boisvert and Moore (2003) (right hand side of figure 1). Figure 1 presents the conceptual framework identifying the key areas under investigation for this study.

Figure 1: Conceptual Framework



Source: Developed for This Research

Paper 2 aligned the study towards a qualitative interpretative approach (Thanh and Thanh, 2015). A thematic analysis data-driven approach was identified using Boyatzis' (1998) three-step approach. Furthermore, the researcher developed a five-stage research design approach to answer the research question. Paper 3 documented the outcome of five pilot interviews conducted with experienced change agents. Through the analysis of the data derived from the interviews, using the five-stage research design approach, the approach was validated with only a few minor alterations being made to the interview guide. This paper documents the findings from an extended study that incorporated a wider and more diverse group of change agents. The thematic analysis aligns the data to the conceptual framework to answer the research questions.

1.2 Paper 4 Approach

This paper presents the findings from the 29 interviews conducted by the researcher, who followed the research design approach set out in Figure 2, below. The findings in this paper aim to answer the research questions linked to the conceptual framework. Section 2 discusses the approach to this research's data collection and analysis. Sections 3 and 4 present the findings of the data, as generated through the 29 interviews. Section 5 presents the researcher's interpretation of the effects of the cumulative findings on the five step reaction model. Section 6 outlines the methodology adopted by the researcher in the development of a good practice model, as identified by the experienced change agents.

2.0 Data Collection and Analysis Approach

This section expands the research from the pilot study and facilitates a deeper dive into the analysis. This analysis provides a deeper understand of the phenomenon. It is aligned to the conceptual framework and aims to answer the research questions. The research population is discussed as per the predefined criteria. The data collection process follows the same process as that used in the pilot study, where the five-step research design process was adhered to (Paper 3, Section 2). Sarantakos' (1998) five-step approach in section 2.3, designed specifically for qualitative interview data analysis, was used for the data analysis in the present study.

2.1 Research Population

Patton (2015) suggests a purposeful sampling strategy to be used, as the interviewees are selected due to their years of experience, and their experience in change projects and skills sets. For the purposes of this research, the researcher had proposed conducting 25 to 35 interviews as the sample size to obtain adequate data saturation. In total 35 participants were selected and contacted from the researcher's personal contacts from which the researcher identified them being a match to the research's participation criteria. However, six participants were unable to partake due to a variety of personal commitments. The data collection process delivered 29 interviews of change agents. The researcher validated the data collection approach via a pilot study incorporating five participants. Additionally, the remaining 24 interviews were conducted once validation of approach was achieved (see, Research Design, figure 2 steps 2 and 3). The combination of the pilot study of five participants and the 24 participants result in the total population of 29 participants. All participants fulfilled the criteria of experienced change agents, as set out in Paper 2, Section 1.1.1, which states: "Experienced change agents are described as professionals with 10 years' work experience and who have managed a minimum of five operational change projects." All participants in the survey fulfilled the criteria as experienced change agents, holding a professional qualification with a minimum of a bachelor's degree, with an average number of years' experience as change agents being 21, and having managed an average of 25+ change projects (see, Appendix 3 for full Research Population Demographic). The date and location of each interview is outlined in Table 1 below.

Table 1: Research Population

Code	Date of Interview	Interview Location		Recorded
CA01	19/06/2019	Dubai	Office	Y
CA02	26/06/2019	Dubai	Office	Y
CA03	26/06/2019	Dubai	Office	Y
CA04	10/7/2019	Dubai	Office	Y
CA05	10/7/2019	Dubai	Office	Y
CA 06	9/12/2019	Dubai	Office	Y
CA 07	10/12/2019	Dubai	Office	Y
CA 08	12/12/2019	Dubai	Office	Y
CA 09	16/12/2019	Dubai	Office	Y
CA 10	16/12/2019	Dubai	Office	Y
CA 11	17/12/2019	Dubai	Office	Y
CA 12	26/12/2019	Ireland	Home*	Y
CA 13	26/12/2019	Ireland	Home*	Y
CA 14	30/12/2019	Ireland	Home*	Y
CA 15	31/12/2019	Ireland	Home*	Y
CA 16	31/12/2019	Ireland	Home*	Y
CA 17	1/1/2020	Ireland	Home*	Y
CA 18	1/1/2020	Ireland	Home*	Y
CA 19	3/1/2020	Ireland	Home*	Y
CA 20	3/1/2020	Ireland	Home*	Y
CA 21	14/01/2020	Dubai	Office	Y
CA 22	14/01/2020	Dubai	Office	Y
CA 23	16/01/2020	Dubai	Office	Y
CA 24	21/01/2020	Dubai	Office	Y
CA 25	21/01/2020	Dubai	Home*	Y
CA 26	23/01/2020	Dubai	Home*	Y
CA 27	29/01/2020	Dubai	Office	Y
CA 28	2/2/2020	Dubai	Office	Y
CA 29	2/2/2020	Dubai	Office	Y

*

Indicated interviews took place in Interviewees' home

2.2 Summary of Data Collection Process

The researcher contacted all potential participants in the study in advance, in order to discuss the research topic, the duration of interview, and the recording of the interview. Those who consented to participate in the study were then allotted an agreed date, time and location for the interviews (as per the schedule in Table 1). The researcher gained written consent from the participants and all interviews were recorded (see, Appendix 1: DBA Consent Form). The predefined semi-structured interview guide was followed in all interviews (see, Appendix 2: Interview Guide).

2.3 Summary of Data Analysis Process

The researcher followed Sarantakos' (1998) five-step approach, using Steps 1, 2 and 3 for the data analysis, step 4 discusses the explanation of the findings and step 5 discusses the verification of the findings.

2.3.1 Step 1: Transcribing Audio Files

All 29 interviews were audio recorded by the researcher and transcribed verbatim.

2.3.2 Step 2: Checking and Editing the Transcript Data

The researcher printed and read all 29 transcripts, while concurrently listening to the recording. This facilitated the checking and validating of their accuracy. Reflection on field notes helped the researcher to identify areas of importance in the study.

2.3.3 Step 3: Analysing and Interpreting the Data

Boyatzis' (1998) thematic analysis data-driven approach was used for analysing and interpreting the qualitative data. The researcher manually colour-coded the transcripts,

aligning the coding with the conceptual framework reaction model of trigger/signal identification, mitigation effort, response, recovery and learning (Boisvert and Moore, 2003; Pearson and Mitroff, 1993), see, paper 1, section 2.8. This technique helped with the identification of samples and subsamples in the initial data reduction process (Boyatzis, 1998). Moreover, the themes were manually colour-coded. This enabled the researcher to easily align the themes in the text and to record notes, where appropriate, prior to uploading the transcripts into NVivo for full analysis, where nodes and sub-nodes were identified with the main themes (see, Data Analysis Steps, Appendix 4,). The researcher used the best practice alignment approach of Reijers and Mansar (2005), see, table two below, in their alignment of the nodes and sub-nodes with the best practice alignment approach to achieve a deeper understanding of the data (see, appendix 14 and 15).

Table 2: Best Practice Alignment – Business Process Redesign

Customer	Which focuses on improving contact with customers.
Business Process Operation	Which focuses on how to improve the workflow.
Business Process Behaviour	Which focuses on when the workflow is executed.
Organisation	Which considers both the structure of the organisation (mostly the allocated resources) and the resources involved (types and numbers).
Information	Which describes best practices related to the information the business process uses, creates, may use, or may create.
Technology	Which describes best practices related to the technology the business process uses or may use.
External Environment	Which tries to improve upon the collaboration and communication with the third parties.

Source: Adapted from Reijers and Mansar (2005, p.295)

*2.3.4 Step 4: Explanation of the Finding*s

The researcher discusses the explanation of the research findings in sections 3, 4 and 5 of this paper.

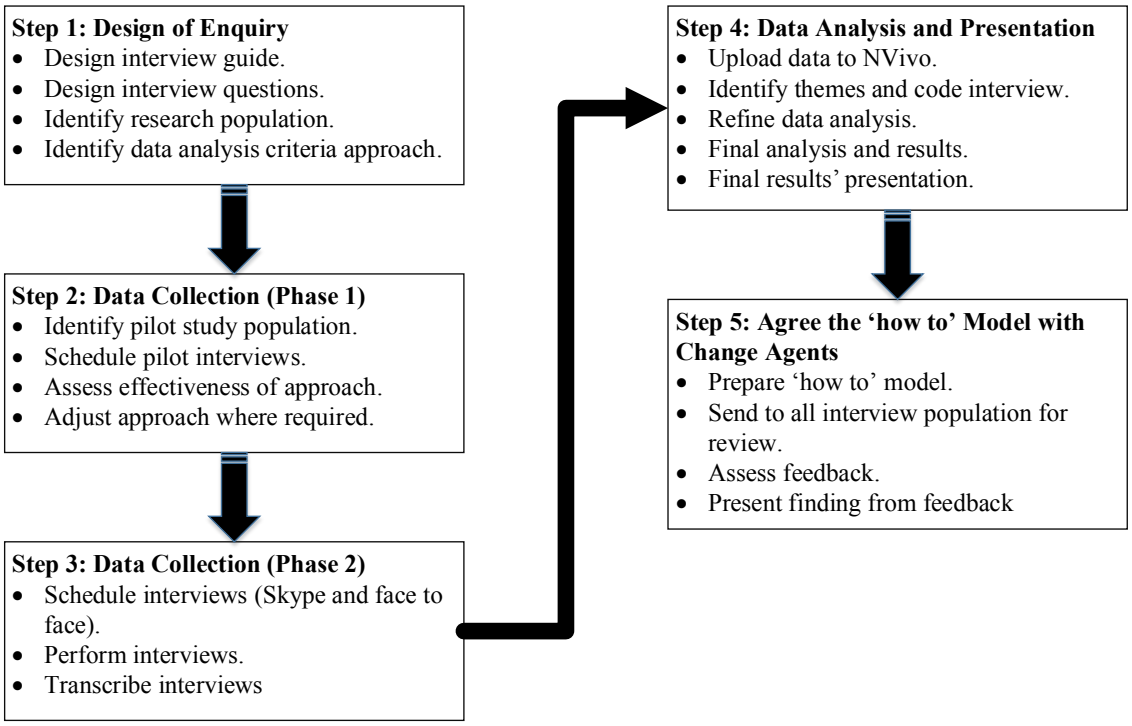
2.3.5 Step 5: Verification of the Findings

The researcher discusses the verification of the study's findings in section 2.4 of this paper.

2.4 Findings: Reliability and Validity

This section discusses the reliability and validity of the research study. Figure 2 illustrates the research design approach, as developed in Paper 2, Section 3.

Figure 2: Research Design



Source: Developed for This Research

2.5.1 Research Reliability

Kelliher (2005) loosely describes reliability as the stability or consistency of the measure being used. The researcher followed the developed research design approach detailed in Figure 2 in all aspects of the research. Silverman (2000) states that pretesting the interview protocol and guide will help to give reliability to the research. Yin (1994) identifies that the use of an interview protocol enhances and maintains the reliability of the research. Silverman (2000) agrees and adds that pretesting the interview protocol and guide will help to give reliability to the research.

The interview guide and questions, once developed, were tested for flow and continuity during the pilot study. This testing resulted in minor changes to the interview guide and no changes to the interview questions. The interview protocol, as set out in Paper 2,

Section 4.3, was adhered to during all interactions with participants of the study. Additionally, within section 7 of the interview guide the participants were asked for feedback on the flow of the interview and the questions asked, all feedback given was positive as recorded in the transcripts.

2.5.2 Research Validity

Creswell (2009) argues that the sample size for qualitative inquiry needs to be large enough to obtain data that adequately describes the phenomena under consideration and to sufficiently answer the research question. Creswell and Creswell (2017) further add that the main aim of qualitative researchers is to attain data saturation. The researcher identified 25 to 35 interviews as the sample size to obtain adequate data saturation. The data collection process delivered 29 interviews of change agents, and through the data analysis process the researcher deemed that he had achieved data saturation point (see, Tables 6-10). Kelliher (2005) argues that validity in qualitative research relies on descriptive data being presented, so that the reader is guided by the researcher to understand the meaning of the study undertaken. The researcher achieved this level of validity through the development of the good practice model and through identifying the resolution steps and activities to mitigate the emergency unplanned event, based on interviewing 29 experienced change agents (see ,Table 10).

3.0 Data Analysis – Change Project Characteristics

This section discusses the delivery of the research requirements, as set out in the conceptual framework (see, Figure 1). The conceptual framework contains five separate data sections to be delivered. The first is the Organisational Characteristics. The second is the Experienced Change Agents' Characteristics. The third is the Nature of Planned Operational Change. The fourth is the Emergency Unplanned Events and the fifth is the Five-step Reaction Model. The first four data sections are discussed in this section and the fifth is discussed in Section 5 below. The collection of this data was embedded into the interview guide (see, Appendix 2), and this data was recorded during the interview process.

3.1 Organisational Characteristics

Table 2 illustrates the 58 organisations discussed during the interview process. It outlines the types of company and the number of employees (see, Appendix 5 for full details). The researcher selected participating change agents from a diverse selection of national, governmental, and multinational organisations incorporating all the unique aspects and

cultural norms associated with their type, size, and location. This diverse selection ensured the core deliverable from this research and allowed for the inclusion of varying levels of organisational hierarchies, and for differences in cultural and regional experience in dealing with emergency unplanned events. Through the data analysis process the researcher has outlined how different types of organisations can approach the emergency unplanned event in different ways. For example, multinational and governmental organisations follow a set approval approach or follow standard procedures to mitigating an emergency unplanned event. However, smaller national organisations may not require such rigorous approvals due to the size of the company and the change agent's stature in the organisation. The variation in organisation type can lead to the five step reaction model being followed in its entirely or due to the size of the organisation, the change agent can solely take the action deemed appropriate to resolve the unplanned event.

Table 3: Organisational Characteristics

Organisation Characteristics		**Totals**	
	Type of company		
	Multinational	**26**	**45%**
	National	**25**	**43%**
	Government	**7**	**12%**
	Totals	**58**	**100%**
	Number of employees		
	Fewer than 100	**5**	**9%**
	100-500	**7**	**12%**
	501-1000	**11**	**19%**
	1000-5000	**18**	**31%**
	Greater than 5000	**17**	**29%**
	Totals	**58**	**100%**

3.2 Experienced Change Agent Characteristics

The researcher followed the recommendation of Patton (2015) to select experienced change agents from their personal contacts as this approach enhances the diversification of the study and enabled a rich data collection from suitably knowledgeable participants to provide rich data to inform the study. In section 2.1, the researcher discussed that all the participants met the criteria as being experienced change agents. The gender breakdown of the 29 participants in the research was 20 males and nine females. The participants were from 10 different countries, working in 10 different sectors, with 59% working in the consultancy sector. Fifteen participants worked as external consultants and

14 worked as internal consultants (see, Appendix 3 for full Research Population Demographics). The participants' demographics show the change agents' diversity in terms of years of experience, geographical location, and qualifications. Additionally, this level, range and depth of diversity provides a greater insight into the experiences, insights and approaches in dealing with emergency unplanned events. This combination of attributes aligned with the change agents' experience in resolving unplanned events in a change plan allowed for deeper understanding of the resolution steps used to mitigate the event. Furthermore, it allowed for the identification of the activities used by the change agents to resolve the events. The researcher has identified five resolution steps (the conceptual framework developed for the research – right hand side of figure 1) and 71 activities used by change agents to resolve unplanned events in a change plan (see, appendix 15).

3.3 Nature of Planned Operational Change

During the process of the 29 interviews, 81 different change initiatives were discussed and organised into four categories. Customer Focused, Process Improvement, and Automation initiatives accounted for 85% of all projects discussed with Cost Optimising initiatives accounting for the remaining 15% (see, Table 4).

For the purpose of this research analysis, the researcher identified the planned operational change initiatives using the following criteria during the analysis of the transcripts. Customer focused initiatives are identified as any initiative which focused on delivery of benefits to the external customers. Process improvement initiatives are identified as those initiatives within an organisation which relate to improvement in operational processes, where process automation and cost optimisation is not the primary goal. Automation initiatives are identified as those initiatives where the goal is to remove human interaction within the process thought the installation of technology. Cost optimisation initiatives are identified as those initiates that are focused solely on cost reduction within an operation.

Table 4: Nature of Planned Operational Change

Nature of Planned Operational Change		Totals	%
1	*Customer Focused*	**24**	**30%**
2	*Process Improvement*	**23**	**28%**
3	*Automation*	**22**	**27%**
4	*Cost Optimisation*	**12**	**15%**
		81	**100%**

The operational change initiatives discussed were implemented in 15 different industry sectors, with the top six industry types accounting for 79% of all industries, as identified in Table 4, below. During the data analysis phase of the research, 81 different initiatives in 15 different industry sectors were assessed. This data rich capture allowed for an alignment of steps and activities over the four planned operational change initiatives categories identified. The number of initiatives and industry sectors assessed enabled the researcher to identify the different resolution steps and activities used by the experience change agents to resolve the issue. Additionally, it allowed the researcher to align the activities used with the resolution steps (see, appendix 15).

Table 5: Types of Industry in which initiatives Implemented

Types of Industry Where Project Implemented		Occurence	Frequency of Occurrence (%)	Cumulative Occurrence Frequency (%)
1	*Energy Industry*	**15**	**19%**	**19%**
2	*Manufacturing Industry*	**15**	**19%**	**37%**
3	*Services Industry*	**15**	**19%**	**56%**
4	*Construction Industry*	**8**	**10%**	**65%**
5	*Finance Industry*	**7**	**9%**	**74%**
6	*Healthcare Industry*	**4**	**5%**	**79%**
7	*Entertainment Industry*	**3**	**4%**	**83%**
8	*Hospitality Industry*	**3**	**4%**	**86%**
9	*Mining Industry*	**3**	**4%**	**90%**
10	*Computer Industry*	**2**	**2%**	**93%**
11	*Water Industry*	**2**	**2%**	**95%**
12	*Aerospace Industry*	**1**	**1%**	**96%**
13	*Food Industry*	**1**	**1%**	**98%**
14	*Pharmaceutical Industry*	**1**	**1%**	**99%**
15	*Transport Industry*	**1**	**1%**	**100%**
		81	**100%**	

3.4 Emergency Unplanned Events

During the interview process, 102 emergency unplanned events were discussed and recorded. Twenty-one change agents discussed and identified more than one unplanned event that occurred to create the trigger/signal identification. This section addresses RO1 to RQ1. A total of 17 types of emergency unplanned events were identified by the change

agents, as illustrated in Table 5 below. The researcher followed the guidance of Reijers and Mansar (2005) and grouped the emergency unplanned into five categories, namely, Projects, Operational, Personnel, Customer and External Influence (see, Appendix 8). This grouping allowed for a more in-depth alignment of the activities conducted by change agents under the five step reaction model where the step and activities are further aligned with the groupings which give a better understanding to the approach as displayed in the resolution steps and activity matrix developed by the researcher (see, appendix 15).

Table 6: Emergency Unplanned Events

Emergency Unplanned Events		Occurrence	Frequency of Occurrence (%)	Cumulative Occurrence Frequency (%)
1	Project Delivery Issues	18	18%	18%
2	Project Scoping Issues	14	14%	31%
3	Customer Complaints	11	11%	42%
4	Financial Impact	9	9%	51%
5	Management Issue	9	9%	60%
6	Key Process Indicators Not Met	8	8%	68%
7	Operational Data Issue	6	6%	74%
8	Resistance to Change	6	6%	79%
9	Reduction in Output	4	4%	83%
10	Supply Chain Issues	4	4%	87%
11	Employee Work to Rule	3	3%	90%
12	Rumours Were Heard	3	3%	93%
13	Internal Complaints	2	2%	95%
14	Political Unrest	2	2%	97%
15	Team Personnel Changes	1	1%	98%
16	Confirmed Links to Competitor	1	1%	99%
17	Threat against Consultant	1	1%	100%
	Totals	**102**	**100%**	

4.0 Data Analysis: The Five-step Reaction Model

This section outlines the findings from the interview process and addresses RQ1, RO2a and RO2b. As stated in Section 5.1 below, 80 per cent of the interviewees followed the five-step reaction model (the conceptual framework developed for the research – right hand side of figure 1) in the initiatives discussed. This confirms the resolution steps used to resolve emergency unplanned events. The following section outlines the resolution steps and activities undertaken by the change agents who took part in the research, to

mitigate the emergency unplanned event. Additionally, the researcher aligns the 71 activities identified by the change agents with the six Best Practice Alignment for business process redesign Reijers and Mansar (2005) (see, table 2 and Appendix 14).

The researcher recognises, through the data interpretation process in NVivo, that some of the rich data input from the interviewees can be lost, however rich interpretation that preceded this stage has influenced the NVivo nodes and sub nodes resulting in 71 activities identified by change agents. The nodes and sub nodes are discussed within this section and are aligned with Best Practice Alignment for business process redesign by Reijers and Mansar (2005). This alignment gives a deeper understanding to the actual events discussed with the participants during the interviews. Moreover, the researcher includes key data rich quotations from the interviewees to validate the nodes and sub nodes identified.

4.1 Step 1: Trigger and Signal Identification

This is the first resolution step of the reaction model's five steps in sequence. In total, 17 activities were identified in this resolution step, as outlined in Table 7. The activities listed are the direct trigger and signals which the change agents identified in relation to the occurrence of an emergency unplanned event that was likely to affect their change initiatives.

Table 7: Trigger and Signal Identification

Name		Files	
Trigger and signal Identification		**29**	**Category**
1	Resistance To Change	6	Behaviour
2	Employee work to rule	3	Behaviour
3	Customer Complaints	11	Customer
4	Rumours were heard	3	External Influence
5	Political Unrest	2	External Influence
6	Threat against consultant	1	External Influence
7	Financial Impact	9	Operatioal
8	Key Process Indicators Not Met	8	Operational
9	Operational Data Issue	6	Operational
10	Reduction in Output	4	Operational
11	Supply Chain Issues	4	Operational
12	Team Personel Changes	1	Personal
13	Management Issue	9	Personel
14	Internal Complaints	2	Personel
15	Confirmed Links to Competitor	1	Personnel
16	Project Delivery Issues	18	Project
17	Project Scoping Issues	14	Project

The researcher notes that all sub-nodes identified refer to an unplanned event occurring. The sub-codes from the researcher's perspective can be grouped into four categories. The first category comprises initiatives related to project events, which includes delivery failures and a lack of project scoping. During the interview process, CA (change agent) 07 highlighted emergency unplanned events being triggered by project delivery issues. CA07 discusses the non-delivery of the project by the project team, due to lack of supervision:

> We ran into big problems when it came to the implementation phase. The reason was I was only due to be on site from one or two days per week, travelling from Ireland over to the UK, but nothing was happening. The project delivery team had fallen flat. [CA07]

The latter refers to an inaccurately detailed project scoping prior to initiating the project and the inclusion of additional activities into an existing project plan, without the inclusion of additional resources. The second category is people-related events. This includes both internal and external customer complaints. It also includes personnel issues within the organisation. CA20 describes their frustration when developing a new medical device. After launching the product to the market, the product was recalled due to faulty parts:

> So we developed the product and launched it and then there was a recall because the valves weren't holding pressure. They were letting blood come out under relaxed mode. We knew there was something going wrong in production. [CA20]

The third category is related to financial influences, in terms of observing reduced output or failure to meet the desired goal. Financial impact can be a key indicator of an emergency unplanned event. CA06 explains their situation, where a key financial deliverable was not achieved to their client, as promised:

> We had stated at the start of the project we would be generating savings in productivity improvements and therefore bottom-line savings within six weeks. That did not happen. [CA06]

The fourth category is external influence, which relate to factors beyond the organisation or the project team's influence. CA25 outlines the importance of on-site supervision within a construction project, where failure to adhere to construction specifications from the contractor caused a collapse in a portion of the building cladding:

> It was a 15-metre by 2-metre piece of steel truss cladding [that] fell from about 20 metres off the building. Luckily, it did not kill anybody. [CA25]

See appendix 9 for Trigger and Signal Identification supporting quotations.

4.2 Step 2: Mitigation Effort

This is the second resolution step of the reaction model's five steps in sequence. In total, 19 activities were identified in this resolution step, as outlined in Table 8. The activities identified are the mitigation effort, as stated by the change agents, to minimise the effects of the emergency unplanned event on the change project.

Table 8: Mitigation Effort

Name		Files	
Mitigation Effort		**29**	**Category**
1	Change Working Hours	1	Behaviour
2	Meeting with Client to Fact Find	7	Customer
3	Data Analysis	10	Operatioanl
4	Assessment of Processes	9	Operatioanl
5	Acknowledge Problem	6	Operatioanl
6	Production Problem	5	Operatioanl
7	Software Tools Assessment	4	Operatioanl
8	Organisation Structure Assessment	1	Operatioanl
9	Purchase essential components	1	Operatioanl
10	Confirm Problem	13	Operational
11	Problem Solving	4	Operational
12	Ineffective Management	8	Personal
13	Communication of Approach	7	Personal
14	Replace Project Team Member	3	Personal
15	Cross Functional Team	2	Personal
16	Staff Skills Assessment	1	Personal
17	Change Project Plan	18	Project
18	Confirm Ineffective Approach	9	Project
19	Project Team restructure	4	Project

The researcher notes that all sub-codes identified refer to an effort to confirm the event or to develop an approach to resolve the unplanned event. From the data presented for this, the effort relates to the verification of the signal and the development of a mitigation approach to resolve the event. The researcher has identified four main categories from the data. The first category focuses on confirming that the signal is real. This category focuses on a deeper understanding of the event and can involve a communication approach to fact finding prior to a response being initiated. From the interviewees' perspective, even if a trigger or signal has been raised, it needs to be confirmed. CA15 discusses the meeting with the customers to validate that there was an issue which required resolution:

> We highlighted this to the site manager and said the output numbers [would] never improve while [he kept] pulling people away from the lines, because there [are] not enough people to run it. [CA06]

The second category is a change to the project plan or scope. This category occurs when the event is confirmed, and immediate action is taken to change the project plan or the scope of the project to include the effect of the new identified event. Changing the project plan is one of the most popular reactions among change agents. CA05 discusses their approach in changing the project plan by introducing an agile workshop to resolve the event:

> In order to resolve the issue, we organised an agile approach. [This] is a workshop with all the stakeholders identifying and resolving the issues to get the project back on track. [CA05]

The third category is changes in resources. This category is related to manpower resources within the project team, as well as the restructuring of working hours and team formation. The researcher has identified that ineffective management is commonplace in change projects. CA05 describes the removal, from the team, of an operations manager whom they identified as a risk to the success of the project:

> We … told our management team that we would not start the project until they removed the manager of the Fleet department. He was removed and we started the project. [CA05]

The fourth category relates to material and technical requirements. This category involves the purchasing of essential components and the involvement of technical personnel to enable the project team resolve the event. CA13 describes a change project in an operational area that affects line operators in accessing the online training platform in multiple sites. It had an impact on operations, as new operators were unable to be trained on operational procedures:

> We mapped out the options that enabled operations to run as normal. It did [affect] online operational training, but this was an acceptable outcome. [CA13]

See appendix 10 for Mitigation Effort supporting quotations.

4.3 Step 3: Response

This is the third resolution step of the reaction model's five steps in the process. In total, 15 activities have been identified in this resolution step, as outlined in Table 9. The

activities identified are the response activities, as stated by the change agents, to minimise the effects of the emergency unplanned event to the change project.

Table 9: Response

Name		Files	
Response		**28**	**Category**
1	Change Peoples Behaviour	13	Behaviour
2	Change Operational Working Hours	2	Behaviour
3	Process Assessment and Improvement Activities	17	Operational
4	Establish a Baseline	3	Operational
5	Data Analysis	3	Operational
6	Establish Incentive Scheme	1	Operational
7	Acceptance of Responsibility	1	Operational
8	Change Project Team	4	Personal
9	Escalate to Company MD or Owner	4	Personal
10	Removal of Manager	3	Personal
11	Change Project Working Hours	3	Personal
12	Increase Project Team Personnel	3	Personal
13	Minimise Impact	14	Project
14	Redefine Project Deliverables	10	Project
15	Handover Of Activities	1	Project

The researcher notes that all sub-codes identified refer to an effort to respond to the unplanned event. From the data presented for this, the effort relates to a direct response to mitigating the event. The researcher has identified three main categories from the data. The first category focuses on minimising the impact of the event on the project timeline and scope. When an emergency unplanned event occurs a key response is to minimise its impact. In a fixed contract where durations are fixed by contracts, CA01 describes their approach by extending their working hours to minimise the impact of the event:

> We had to increase the available time to complete the project with within the exact same period which was 18 weeks. We had no option but to work longer days and weekends. [CA01]

This is a direct approach based on all the information available to the project team at that time. The second category is changes to the project plan and scope, which enable delivery of the additional scope. Project deliverables can change during the project depending on the events that occur. CA22 discusses the challenge faced by their team when upgrading a substation when the availability of approved products became an issue:

> We placed the order early to secure the transformer we required. The company came back and said they no longer had this transformer and we would need to source it from their subsidiary company but this would require a new product validation. [CA22]

The third category is changes in the project resources, which is a combination of replacing existing team members, enlarging the project team's size, and increasing the duration of the project with the same team size. The response effort being to change the project team is a direct action. CA28 states their only solution when faced with an incompetent project manager was to request their replacement:

> We collectively request the removal of the project manager. This is the only course of action that we could see. [CA28]

See appendix 11 for Response supporting quotations.

4.4 Step 4: Recovery

This is the fourth resolution step of the reaction model. In total nine activities have been identified in this resolution step as identified in table 10. The activities identified are the recovery activities as stated by the change agents to minimise the effects of the emergency unplanned event to the change project.

Table 10: Recovery

	Name	Files	
Recovery		**29**	**Category**
1	Gain Client Confidence	6	Customer
2	Monitor of Reports and Performance Indicators	12	Operational
3	Implementation of Restructured Teams	6	Operational
4	Implement Change in Working Hours	3	Personel
5	Implement Incentive Schemes	1	Personel
6	Agree Project Closure or Outcome Activities	18	Project
7	Communication Plan to Gain Agreement	12	Project
8	Communication Plan	9	Project
9	Enhanced Meeting Schedule	1	Project

The researcher notes that all sub-codes identified refer to the recovery and to sustaining the momentum of the change effort while recovering from the unplanned event. The researcher has identified three main categories from the data. The first relates to continuous communication and enhanced meeting schedules. Communication is the key to any change initiative (Kotter, 2007). During an implementation project, CA27 holds a joint meeting with the process owners and the contractors to discuss failures in the current reporting system and to discuss future reporting requirements:

> We had a meeting with the VPs and the contractors. I explained to the contractors the reports being presented are misleading and they need to be altered to reflect reality. [CA27]

The second relates to changes in working hours and a restructured team. The third relates to managing the processes and project milestones through the monitoring of reports and performance indicators. Monitoring of Reports and Performance Indicators is a normal activity when in recovery mode. From the interviewees' perspective this activity enables the project team to visualise the improvement and react if necessary. CA12 explains this approach and the assistance that the report/indicators facilitated the closure of the project.

> There were weekly statistics available and we know, 20%, 30%, 40% of our customers had moved to the new service channel. [CA12]

See appendix 12 for Recovery supporting quotations.

4.5 Step 5: Learning

This is the reaction model's fifth and final resolution step. In total eleven activities have been identified in this resolution step as shown in table 11. The activities identified are the reflections on lessons learnt, as stated, by the change agents to minimise the effects of the emergency unplanned event on the change project.

Table 11: Learning

Name		Files	
Learning		**24**	**Category**
1	Manage Client Perception and Expectations	7	Customer
2	Better Client Involvement	5	Customer
3	Manage Customer Feedback process Carefully	1	Customer
4	Due Diligence	5	Operational
5	Better Communication Plan	6	Operational
6	Enhanced Process Monitoring	5	Operational
7	Failure to Understand Training Population	2	Operational
8	Better Project Team	5	Personnel
9	Minimise Human Error through Process Controls	1	Personnel
10	Improve Implementation Approach	11	Project
11	Manage Project Scope	8	Project

The researcher notes that all sub-codes identified refer to an effort to respond to the unplanned event. From the data presented, this effort reflects the thoughts of the participants concerning the mitigation process to manage the unplanned event. The researcher has identified three main categories from the data. The first relates to better project scoping, approach development and team selection. Project scope management is

critical to the successful management of a project. CA18 demonstrates their learnings by not completing a full scoping assessment and allowing additional scoping to be added to the project causing disruption and negotiations during implementation:

> The scope should be agreed before you start the job as opposed to starting the job and then changing the scope afterwards. [CA18]

The second relates to better communication and involvement with the client throughout the project. CA28 identifies a similar lesson learnt; however they discuss the lack of cultural knowledge when dealing with an Asian client:

> We did not understand their food, their culture, their way of conducting a meeting. So this was a huge learning, a cultural learning for us. [CA28]

The third relates to better monitoring of the project and process activities. See, appendix 13 for Learning supporting quotations.

Section four addresses the research objectives RO2a and RO2b. From the change agents' perspective the researcher has identified five resolution steps used to mitigate an emergency unplanned event as presented in the conceptual framework in Figure 1. Additionally, the researcher had identified, in total, seventy different activities used by the change agents over the five resolution steps to mitigate an emergency unplanned event. In addition, the researcher aligns the 71 activities identifies by the change agents with the six Best Practice Alignment for business process redesign (see, table 2 and Appendixes)

5.0 Observations on the Conceptual Framework – five-step reaction model

This section explores, from the researcher's perspective, the overall data's impact on the five-step reaction model. The researcher identifies the participants' adherence to the five-step reaction model and the unique details emerging from the qualitative data analysis.

5.1 Adherence to the five step reaction model

The twenty-nine change agents' referenced 81 different change projects. The researcher observed that 80 per cent of all 29 participants (23 out of 29 interviewees) followed the five-step reaction model, with 20 per cent not following recovery and learning, or a combination of both. This level of adherence to the sequence of the five-step reaction

model would infer that the model is still valid and is the current process used by most experienced change agents to mitigate emergency unplanned events in an operational change plan.

In section 3, the researcher outlines the effect that the organisational characteristics, experienced change agents' characteristics, and the nature of planned operational change has on the five-step reaction model. Considering these characteristics and the emergency unplanned event itself, can lead to a diverse combination of activities, of which the researcher has identified seventy, which can be used during an approach to mitigating the unplanned emergency event (see, Appendix 14).

5.2 Overall findings on the five step reaction theoretical model

This section presents a number of observations made by the researcher during the interview and data analysis process in relation to the five step reaction model.

5.2.1 Linearity of Model

The model, as presented by Boisvert and Moore (2003) and Pearson and Mitroff (1993), see, paper 1, section 2.8, does appear linear. The model does function in a linear manner for the majority of the mitigation approaches used by change agents, however with more complex mitigation effort the model appears less linear. The researcher has observed that the steps Trigger and Signal Identification and Learning are for most part the first and last steps in the model. Mitigation effort, Response and Recovery can be linear, however, during complex project where Recovery is not achieving the desired results the change agents have to revisit the loop of Mitigation effort, Response and Recovery to achieve a desired outcome to the unplanned event. The researcher now refers to these three steps as the "doing" section of the model.

5.2.2 Steps of equal 'size'

The researcher observed that the size of the steps depends on the complexity of the step. Boisvert and Moore (2003) and Pearson and Mitroff (1993) present their models in a linear manner with the steps in the models being of equal size. However, the researcher has observed the sizing of the steps can be determined by two factors, the first is the complexity of the mitigation effort itself. The researcher observed that if the mitigation effort approach is clear and simply validated then the sizing can be similar. However, during complex mitigation efforts Mitigation Effort, Response and Recovery steps may require revisiting a number of times to achieve complete Recovery. This would infer these three steps, Mitigation Effort, Response and Recovery, require a greater effort then Trigger and Signal Identification and Learning. The second factor is that the time taken

per step will depend greatly on the effort required. Similarly, to the first factor the greater the complexity of the mitigation effort will determine the time taken to recover from the unplanned event.

5.2.3 Sequencing of Steps

The researcher stated in 5.1 above that 80 per cent of all 29 participants (23 out of 29 interviewees) followed the five-step reaction model, with 20 per cent not following recovery and learning, or a combination of both. The reaction model's steps of Trigger and Signal Identification, Mitigation Effort and Response follow the sequence of the five step reaction model. However, it is observed that Recovery and Learning, though used in 80 per cent of the projects, do not follow the normal model sequencing for the remaining 20 per cent of the projects.

5.2.4 Overlapping of Steps

The researcher has observed that overlapping of steps can occur depending on the complexity of the mitigation effort required to resolve the event. The overlapping can be seen in complex reaction efforts in particular in Mitigation Effort, Response and Recovery steps. Within a complex reaction effort, multiple activities can be required concurrently to achieve a successful recovery. These activities can require different time frames for completion, resulting in the project team managing different activities in different steps of the reaction model at the same time.

5.2.5 Complexity of the Model

The researcher has discussed the complexity of the model in relation to the complex effort required to resolve the unplanned event, however there is a deeper complexity to the reaction model with much of this complexity relying on the interaction between project and operational personnel. The researcher highlights the main complex issues observed as a lack of support from management team, a lack of cooperation from team and operations staff, conflict between team members and management, ineffective management, unwillingness to accept the change process and poor project planning, and a lack of project scope clarification at the start of the project. The complexities observed became apparent during the interview and data analysis phase of the research and give a greater understanding of the effort required when mitigating an unplanned event.

5.3 Cross-Activity Observations

Through the analysis of all five themes and the 71 activities identified during the data analysis phase the researcher has identified a number of similar activities in different

themes. The activities are deemed appropriate to each theme based on the action required by the change agents in their mitigation of the unplanned events. Additionally, the validation of the activities per theme arose from the discussion with the interviewee and analysis of the transcripts. This section identifies the main cross activities observed as: changes in team structure, assessment of processes, change in working hours, redefine project deliverables and meet the client.

5.3.1 Changes in Team Structure

This activity occurs in three themes, namely: Mitigation Effort (table 7, row 12); Project Team Restructure, Response (table 8, row 5), Change Project Team and Recovery (table 9, row 6); and Implementation of Restructured Teams. This sub-code comprises valid activities under each of the themes as a response to an emergency unplanned event.

5.3.2 Assessment of Processes

This activity occurs in three themes, namely: Mitigation Effort (activity 4), Assessment of Processes and Response (activity 1); Process Assessment and Improvement of Activities and Recovery (activity 6); and Implementation of Restructured Teams (see, Tables 7 and 8 respectively). All of these sub-codes are valid under both themes. Assessment of Process under the theme Mitigation Effort refers to trigger and signal confirmation, where Process Assessment and Improvement of Activities are the approaches to implementing the "fix" to the problem under the theme Response.

5.3.3 Change in Working Hours

This activity occurs in three themes, namely: Mitigation Effort (table 7, row 16); Change in Working Hours, and Response (table 8, row 12); Change in Operational Working Hours and Recovery (table 9, row 7); and Implement Changes in Working Hours. These sub-codes apply to both the project team implementing that change plan and the operational team with which the project team is working. All three sub-codes are appropriate to their theme as a suitable step.

5.3.4 Redefine Project Deliverables

This activity occurs in two themes, namely: Response (line 4), Redefine Project Deliverables, and Recovery (line 1); and Agree Project Closure or Outcome Activities (see, Tables 8 and 9 respectively). These activities highlight changes to the project plans and include additional actions to be agreed and implemented by the project team, in order to mitigate the impact of the emergency unplanned event.

5.3.5 Meet the Client

This activity occurs in three themes, namely: Mitigation Effort (table 7, row 8), Meet with Client to Fact Find, Response (table 8, row 6); Escalate to Company MD or Owner and Recovery (table 9, row 2); and Communicate Plan and Gain Agreement (table 9, row 5), Gain Client's Confidence. All four sub-codes comprise an effective action within the theme to achieve the initiatives deliverables following the occurrence of the emergency unplanned event.

In this section, the researcher has validated the current usage of the five step reaction model. The research participants' usage of each step of the model is outlined and the activities used are identified. Participants use all five step of the reaction model in 80 per cent of all initiatives reviewed. The researcher has identified the steps Trigger and Signal Identification and Learning as stand alone and are used once per response effort. However, Mitigation Effort, Response and Recovery can require multiple revisits depending on the complexity of the effort required to mitigate the impact of an emergency unplanned event.

6.0 Conceptual Framework Revisited

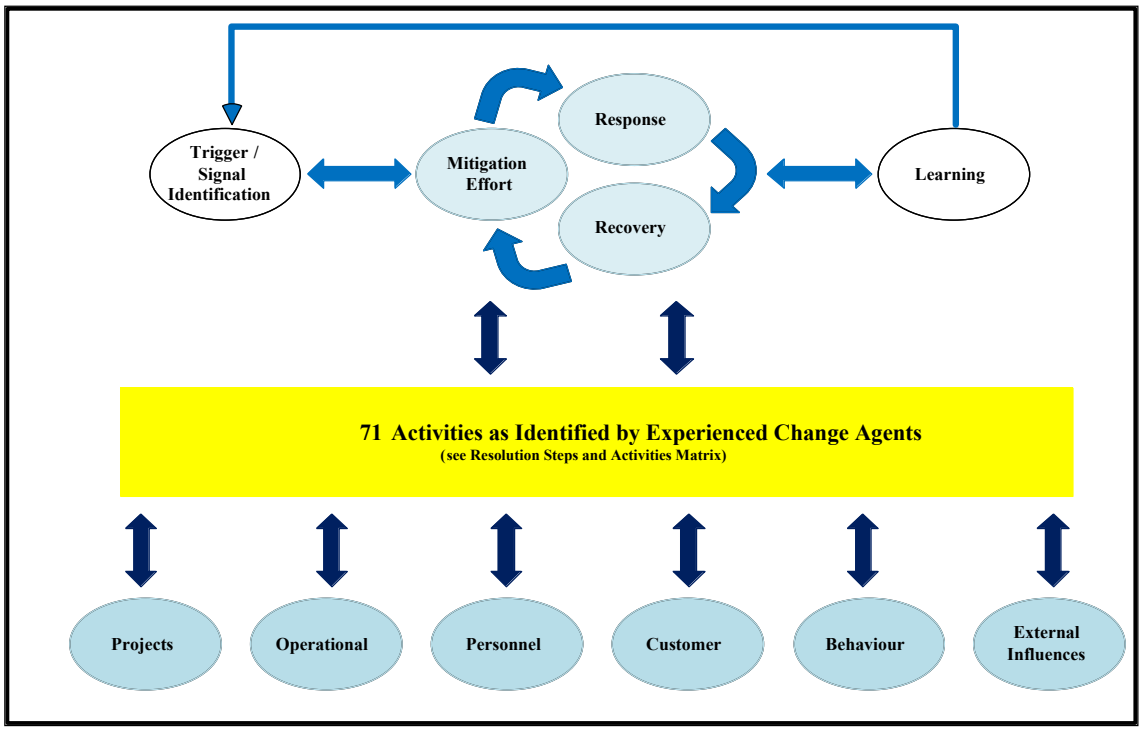
The section revisits the conceptual framework (see, figure 1), aligning and discussing the findings from organisational characteristics, experienced change agent's characteristics, nature of planned operational change and emergency unplanned events with the framework. The researcher followed the guidance of Patton (2015), suggesting a purposeful sampling strategy to be used, as the interviewees were selected due to their years of experience, and their experience in change projects and skills sets. Additionally, the purposeful sampling strategy facilitated rich data collection given that all 29 participants worked as change agents, fifteen working within the consultancy industry and fourteen worked as internal consultant within their organisations. Moreover, incorporating the participants' experience with their organisations' characteristics and nature of planned operational change initiatives gave a diverse discussion on initiative types, which further enhanced the data.

The researcher has discussed the results of this purposeful sampling in section 3. Furthermore, the diverse nature of organisational characteristics, experienced change agents' characteristics, nature of planned operational change and emergency unplanned events are discussed in detail. Moreover, appendix 5, 6 and 7 illustrates, in detail, the

diverse characteristics of the participants. The characteristics discussed are included within the conceptual model to ensure a data rich return from the interviews leading towards greater data alignment with the five-phase emergency and crisis mitigation model proposed by Pearson and Mitroff (1993) and Boisvert and Moore (2003), see, paper 1, section 2.8, which is contained within the conceptual framework. For the purpose of this research, the researcher limited the use of the characteristics discussed above to the collection of diverse data.

In section 2.3.3 the researcher discussed the analysing and interpreting of the data and the alignment of the data reduction process using the best practice alignment approach of Reijers and Mansar (2005), see, table 2, moreover, the alignment of the nodes and sub-nodes with the best practice alignment approach to achieve a deeper understanding of the data (see, appendix 14 and 15). In section 5.2.1 the researcher discusses the linearity of the model, and identifies that the steps Trigger and Signal Identification and Learning are for most part the first and last steps in the model. Additionally, Mitigation effort, Response and Recovery can be linear, however, during complex projects where Recovery is not achieving the desired results the change agents have to revisit the loop of Mitigation effort, Response and Recovery to achieve a desired outcome to the emergency unplanned event. The researcher has updated the conceptual framework to incorporate these observations from the change agent's experience. Reflecting on the outcome of the data analysis the researcher has revisited the conceptual framework (see, figure 3). The loop of Mitigation effort, Response and Recovery to achieve the desired resolution to the emergency unplanned event is illustrated in the five-step mitigation model in the new conceptual framework at the top of figure 3. In the centre of the conceptual framework the 71 activities as identified by the change agents are aligned the mitigation model and with the best practice alignment approach of Reijers and Mansar (2005), see, table 2, (appendix 14 and 15).

Figure 3: Conceptual Framework - Revisited



Source: Developed for This Research

Through the data analysis the researcher gained a deeper understanding of the complexity of the mitigation effort required by change agents in their efforts to mitigate the impact of an emergency unplanned event in a planned operational change project, resulting in the reconstructing of the conceptual framework as shown in figure 3.

7.0 Concluding Remarks

This paper outlines the research approach and methodology used by the researcher to present the findings. The researcher interviewed a total of 29 experienced change agents. All interviews were recorded and followed the researcher's approach as set out in the research design (see, Figure 2). The researcher was directed by the interview guide, which enabled the collection of pertinent data on: (1) the organisational characteristics in which the change initiatives was performed; (2) the characteristics of the experienced change agents who delivered the initiative; (3) the nature of the planned operational change initiatives; and (4) the emergency unplanned events that occurred and the mitigation processes used by the change agents to resolve these unplanned events.

All the data collected was in line with the research questions and objectives, as well as the conceptual framework (see, Figure 1). NVivo software was used as the data analysis tool. The analysis confirmed the five-step reaction model as being valid and identified 71 activities used by experienced change agents, when faced with an emergency unplanned

event during an operational change initiatives. Sections 3 and 4 outlined the findings, which addresses the research questions and objectives. Section 5 presented the impact of the findings on the 5 step reaction model. Section 6 revisited the conceptual framework and discusses the purpose for collecting the organisational characteristics, experienced change agent's characteristics, nature of planned operational change and emergency unplanned events. The researcher revisited the conceptual framework and reconstructed it based on the data gathered from the change agents, and aligned the framework with the best practice alignment approach of Reijers and Mansar (2005).

The next step for the researcher will be to compile a deeper discussion of the research findings. This discussion will be presented in Paper 5. Through the data gathered from the 29 interviews, the researcher considers that data saturation was achieved. However, the findings are limited to the number of interviews conducted, the characteristics of the organisations, the change initiatives, the change agents' experience, and the researcher's interpretation of the data.

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9.0 Appendices

Appendix 1: DBA Consent Form

I have read and understood the information sheet provided and by choosing to give consent:

(Please tick the box)

6) I am voluntarily participating in this study. ☐

7) I grant permission for you to record my interview. ☐

8) I understand that I can withdraw from the study at any point. ☐

9) I understand that my own and my organisation's details will be anonymised. ☐

10) I understand that the anonymised data will be cited in the thesis and other publications. ☐

Signature

Participant _____ Date _____

Researcher _____ Date _____

Edmond Walshe (20074625)

Appendix 2: Interview Guide

14. Informed Consent from Interviewee

s. Outline of research question and objectives of research.

t. Overview of data to be collected.

u. Outline the interview data storage protocols.

v. Discuss data confidentiality and anonymity in analysis.

w. Duration of interview is approximately one hour.

x. The interview will be recorded.

y. Does the interviewee consent to continuing with the interview? Yes or No?

z. A transcript of the interview will be made available to the interviewee if required. Is it required? Yes or No?

aa. Does the interviewee consent to be contactable in the future with regard to this research? **Yes or No?**

15. Background Information on Interviewee

o. Name of interviewee.

p. Level of education.

Prompt: Third level and professional qualifications.

q. Number of years' work experience.

r. Number of years' experience as a change agent.

s. Current title of interviewee.

t. Number and type of change projects participated in.

u. Are you a consultant (internal or external)

16. Background Information on Organisation

i. Type of organisation (multinational, national, etc.).

j. Industry type (manufacturing, service, financial, etc.).

k. Number of employees within the organisation.

l. Number of years participant has worked with the organisation.

17. Discuss the approach to the interview and its required topic

a. Explain the requirements for the emergency aspects in the projects for discussion

b. Three to four examples is a requirement, if possible

18. Background to the Change Projects under Discussion

e. Can you describe the change projects you have done in your organisation?
Prompting towards change projects and their outcome.

f. Can you give a brief description of the change project under discussion that matches the criteria for the research?

Prompts

- *Type of project (process/technology/people).*
- *What was the project team structure?*
- *What was the experience of the team members involved?*
- *What initiated the project (customer/productivity, etc.)?*

19. Mitigation Questions on the Change Project under Discussion

m. Within all change project unplanned events do occur. Have you experienced such a problem in your projects?
Prompt: emergency is an abnormal situation requiring prompt action outside normal operational procedures, in order to limit damage to employees, property, or environment.

- *Can you describe how the problem was first detected?*
- *How did you know the problem was real?*
- *Can you describe how the problem was resolved?*

n. Trigger/signal identification
Prompts:

- *Scanning for signals:*
  - *How did you know something was wrong? (Human or technology)?*
- *Signal capture:*
  - *What initiated the problem? (Human or technology)*
  - *How did you validate that the problem was real?*
  - *During the validation of the problem how detailed was the assessment?*
- *Signal transmission:*
  - *Once you identified the problem, what happened next to mitigate the problem?*
  - *How was it communicated?*

o. Mitigation of effort

How did you deal with the problem?

How was this plan developed?

p. Response

What was the response approach?

Was it damage limitation/containment or was it to follow existing organisational procedures?

q. Recovery

Was there a communication plan, if so how and to whom was it delivered?

What was the plan to minimise the impact of the problem?

Was there prioritisation of activities in the recovery, if so why?

r. Learning

How do you or your organisation minimise the reoccurrence of the problem?

How was this experience used within your organisation?

20. Closing Remarks

- Thank the interviewee for their participation.
- Ask for feedback on the flow of the interview and the questions asked. Make a note of comments given.
- Confirm the availability of the transcript and change process, if required.
- Ensure that contact details are shared for transcript review.

Appendix 3: Research Population Demographic

Code	Age	Gender	Nationality	Educational Level	Years of Experience as a Change Agent	Change Management Training Undertaken	Internal/External Consultant	Industry	Work Experience	Number of Change Projects Managed
CA01	52	M	British	Master's	26	Black Belt	External	Consultant	International	20+
CA02	39	M	British	Master's	16	Green Belt	External	Consultant	International	30+
CA03	53	M	Irish	Batchelor's	24	Experience	External	Consultant	International	30+
CA04	37	M	UAE	Master's	10	Black Belt	Internal	Utility	National	30+
CA05	37	M	UAE	Master's	10	Black Belt	Internal	Utility	National	30+
CA 06	54	M	British	Batchelor's	25	Experience	External	Consultant	International	30+
CA 07	54	M	Irish	Master's	26	Black Belt	External	Consultant	International	30+
CA 08	54	M	British	Batchelor's	26	Experience	External	Consultant	International	30+
CA 09	59	M	British	Master's	37	Experience	External	Consultant	International	30+
CA 10	35	F	Singapoer	Batchelor's	12	Black Belt	Internal	Consultant	International	20+
CA 11	42	M	Indian	Master's	20	Experience	External	Consultant	International	30+
CA 12	56	F	Irish	Batchelor's	21	Experience	Internal	Finance	National	20+
CA 13	48	F	Irish	Batchelor's	20	Experience	Internal	Manufacturing	International	15+
CA 14	54	M	Irish	Master's	18	Experience	Internal	Arts	International	30+
CA 15	50	M	Irish	Batchelor's	28	Experience	Internal	Insurance	National	30+
CA 16	54	F	Irish	Master's	30	Experience	Internal	Local Authority	National	15+
CA 17	54	F	Irish	Batchelor's	19	Experience	External	Consultant	National	30+
CA 18	54	M	Irish	Batchelor's	22	Experience	Internal	Services	National	30+
CA 19	48	F	Irish	Master's	14	Experience	Internal	Health Care	National	15+
CA 20	38	M	Irish	Master's	10	Experience	External	Manufacturing	National	10+
CA 21	48	F	Italian	Batchelor's	22	Black Belt	Internal	Utility	National	15+
CA 22	58	M	Malaysia	Batchelor's	32	Experience	External	Consultant	International	30+
CA 23	65	M	British	Batchelor's	31	Experience	Internal	Consultant	International	30+
CA 24	44	M	Pakastian	Master's	22	Black Belt	Internal	Consultant	National	30+
CA 25	49	M	British	Batchelor's	18	Experience	External	Consultant	International	30+
CA 26	44	F	South African	Batchelor's	15	Experience	Internal	Hospitality	International	15+
CA 27	49	M	Iranian	PhD	26	Experience	External	Consultant	International	30+
CA 28	49	F	South African	Batchelor's	18	Green Belt	External	Consultant	International	30+
CA 29	42	M	Indian	Master's	8	Experience	External	Consultant	International	10+

Appendix 4: Data Analysis Steps

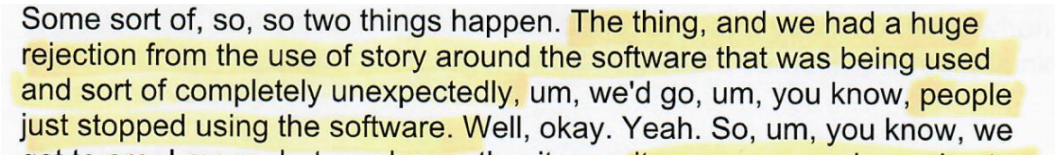
Step 1

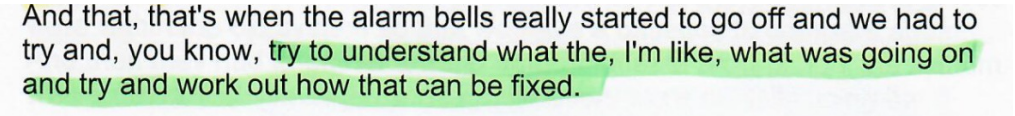
Once the interviews were completed and transcribed, the themes from the five-phase emergency and crisis mitigation model of Trigger/Signal Identification, Mitigation Effort, Response, Recovery and Learning were identified in the transcripts and colour-coded manually, using the colour codes below (Boisvert and Moore, 2003; Pearson and Mitroff, 1993).

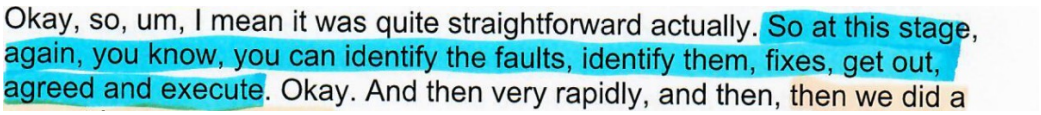
Colour Code for Themes

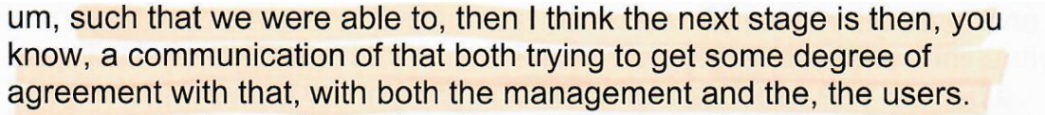
Trigger/Signal Identification	
Mitigation Effort	
Response	
Recovery	
Learning	

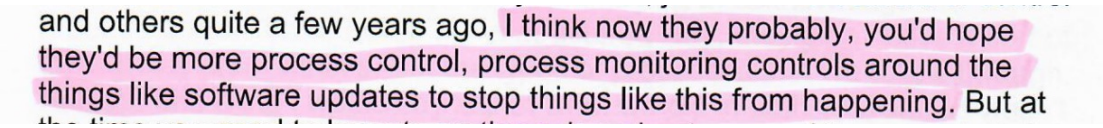
Examples of in-text coding of themes:


Some sort of, so, so two things happen. The thing, and we had a huge rejection from the use of story around the software that was being used and sort of completely unexpectedly, um, we'd go, um, you know, people just stopped using the software. Well, okay. Yeah. So, um, you know, we


And that, that's when the alarm bells really started to go off and we had to try and, you know, try to understand what the, I'm like, what was going on and try and work out how that can be fixed.

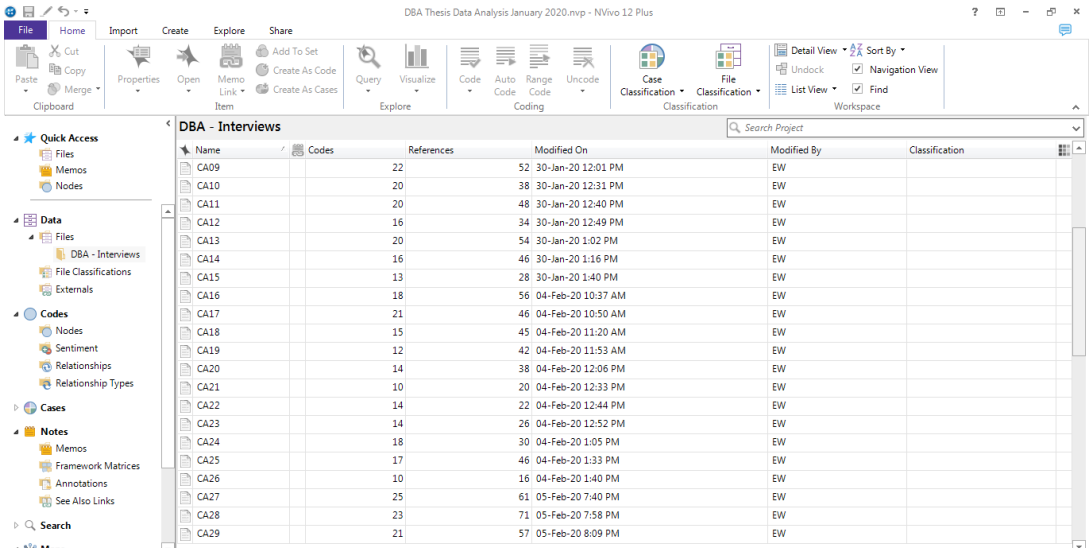

Okay, so, um, I mean it was quite straightforward actually. So at this stage, again, you know, you can identify the faults, identify them, fixes, get out, agreed and execute. Okay. And then very rapidly, and then, then we did a


um, such that we were able to, then I think the next stage is then, you know, a communication of that both trying to get some degree of agreement with that, with both the management and the, the users.

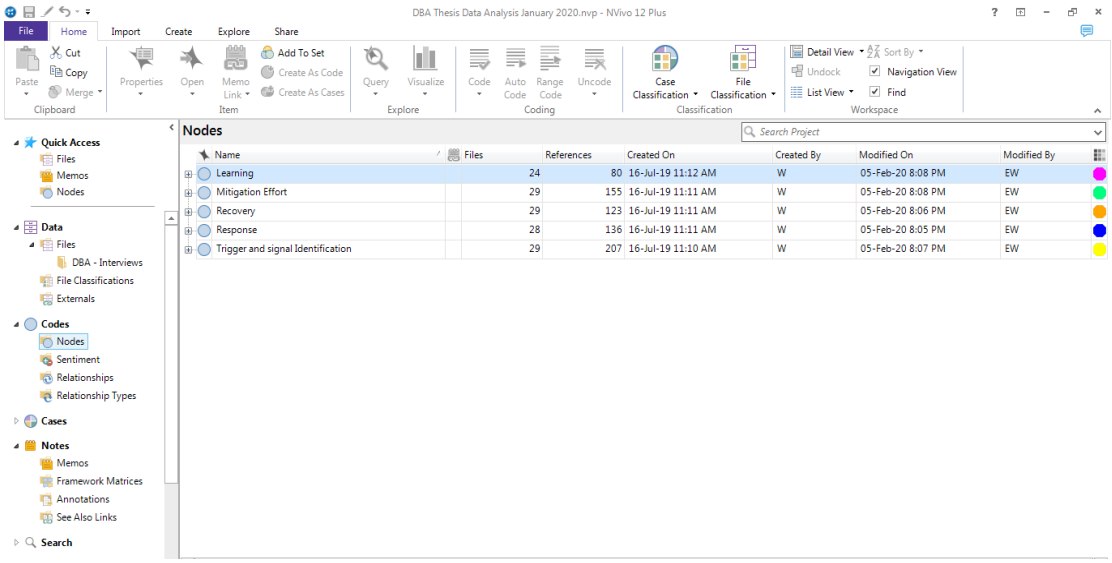

and others quite a few years ago, I think now they probably, you'd hope they'd be more process control, process monitoring controls around the things like software updates to stop things like this from happening. But at

Step 2

The transcripts were uploaded to NVivo. Each interviewee was assigned a code (CA) and a number that equated to the sequence of the interviews.

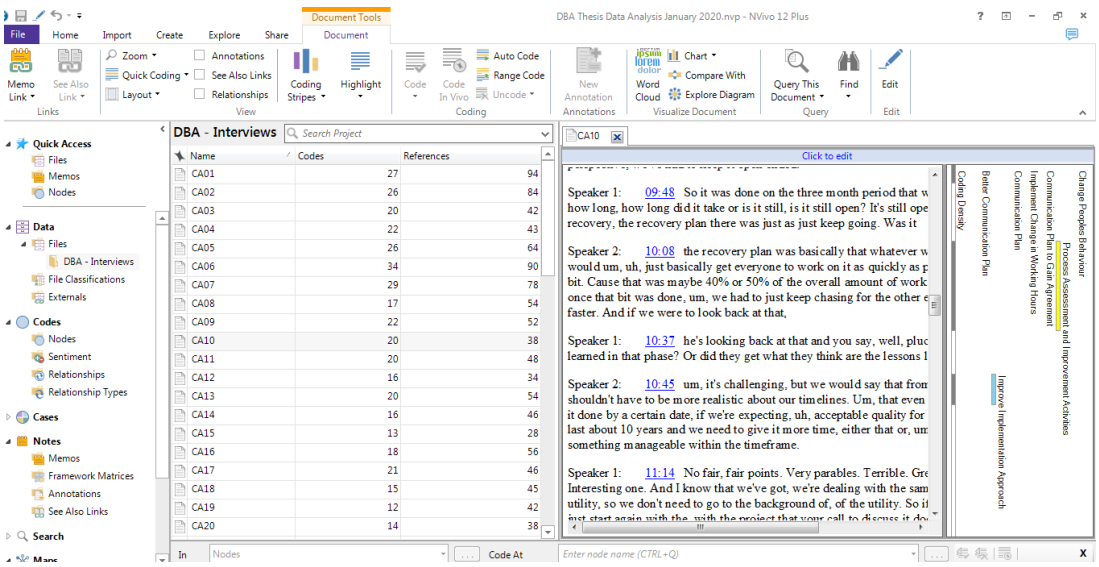


The researcher repeated the exercise of Step 1: identifying the five themes in NVivo and assigning a colour code.



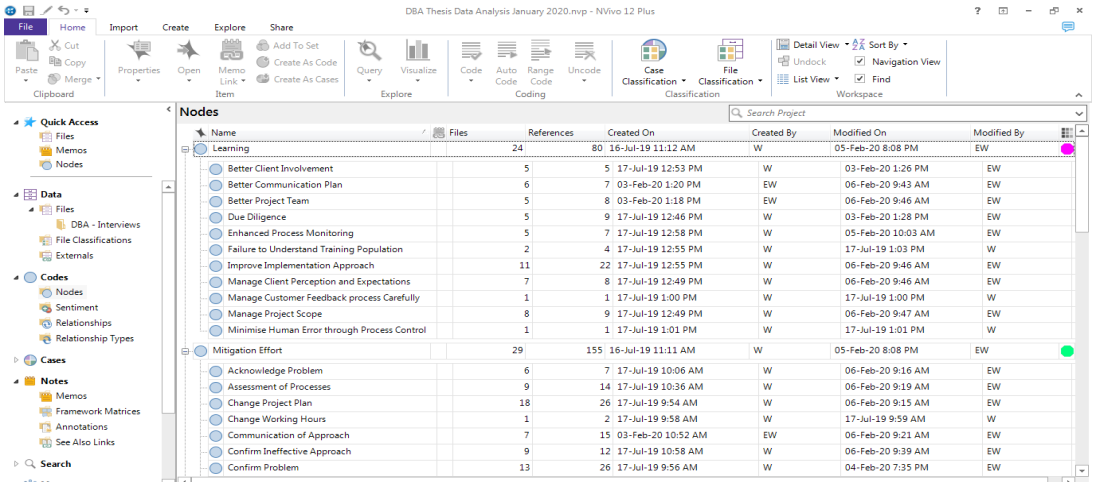
Step 3

The researcher read the transcripts again, focusing on the identified five-themed areas of the transcripts, and identifying sub-codes for each of the five themes. The table below illustrates the coding alignment technique used, where the transcripts are aligned with the themes and sub-codes.



Step 4

The initial sub-codes for the five themes were identified, but the quantification and analysis was limited to the twenty nine interviews.



Appendix 5: Organisational Characteristics

Organisation Characteristics		CA01	CA02	CA03	CA04	CA05	CA06	CA07	CA08	CA09	CA10	CA11	CA12	CA13	CA14	CA15	CA16	CA17	CA18	CA19	CA20	CA21	CA22	CA23	CA24	CA25	CA26	CA27	CA28	CA29	Totals	
Type of company																																
Multinational		3	2	1		2	1	2	2			3		1				2			2					1		2	2		**26**	**45%**
National			1	1			2	1	1	3			3		1	1			1	1	1		1	1	1		1		1	3	**25**	**43%**
Government				1	1	1					1						1					1						1			**7**	**12%**
Totals		**3**	**3**	**3**	**1**	**3**	**3**	**3**	**3**	**3**	**1**	**3**	**3**	**1**	**1**	**1**	**1**	**2**	**1**	**1**	**3**	**1**	**1**	**1**	**1**	**1**	**1**	**3**	**3**	**58**	**100%**
Number of employees																																
Fewer than 100															1	1	1		1		1										**5**	**9%**
100-500				1			2				1															1		2			**7**	**12%**
501-1000		2	1	1		2		1	2													1									**11**	**19%**
1000-5000		1	2	1			1	2		2		1	3								1			1			1		2		**18**	**31%**
Greater than 5000					1	1				1		2		1				2		1					1			1	3		**17**	**29%**
Totals		**3**	**3**	**3**	**1**	**3**	**3**	**3**	**3**	**3**	**1**	**3**	**3**	**1**	**1**	**1**	**1**	**2**	**1**	**1**	**3**	**1**	**1**	**1**	**1**	**1**	**1**	**3**	**3**	**3**	**58**	**100%**

Appendix 6: Nature of Planned Operational Change

Nature of Planned Operational Change																															Totals	%
1 Customer Focused																															**24**	**30%**
2 Process Improvement																															**23**	**28%**
3 Automation																															**22**	**27%**
4 Cost Optimisation																															**12**	**15%**
	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	**81**	**100%**
CA01																																
CA02			1																													
CA03			1	1																												
CA04				2	1																											
CA05				3																												
CA06			1																													
CA07			1	1																												
CA08																																
CA09					1	2	3																									
CA10					1	1																										
CA11					2	1																										
CA12					1			2																								
CA13					3																											
CA14								3																								
CA15								2	2																							
CA16							2	1																								
CA17					3																											
CA18								3																								
CA19							1	1																								
CA20							3																									
CA21							3																									
CA22							1																									
CA23								1																								
CA24							1	1																								
CA25								2																								
CA26								3																								
CA27							1	2																								
CA28					3																											
CA29					3	3																										

Appendix 7: Nature of Planned Operational Change

Type of Industry in Which Project Implemented		CA01	CA02	CA03	CA04	CA05	CA06	CA07	CA08	CA09	CA10	CA11	CA12	CA13	CA14	CA15	CA16	CA17	CA18	CA19	CA20	CA21	CA22	CA23	CA24	CA25	CA26	CA27	CA28	CA29	Occurrence	Frequency of Occurrence (%)	Cumulative Occurrence Frequency (%)
1 Energy Industry		3			3	3															3	1	1						1		**15**	**19%**	**19%**
2 Manufacturing Industry		1	1				1		1	1			3				2			3								2			**15**	**19%**	**37%**
3 Services Industry		1	1								3					2	3							2				3			**15**	**19%**	**56%**
4 Construction Industry																			3						2		3				**8**	**10%**	**65%**
5 Finance Industry									1			3	3																		**7**	**9%**	**74%**
6 Healthcare Industry								1												3											**4**	**5%**	**79%**
7 Entertainment Industry															3																**3**	**4%**	**83%**
8 Hospitality Industry																										3					**3**	**4%**	**86%**
9 Mining Industry		1							2																						**3**	**4%**	**90%**
10 Computer Industry																		1						1							**2**	**2%**	**93%**
11 Water Industry			1				1																								**2**	**2%**	**95%**
12 Aerospace Industry								1																							**1**	**1%**	**96%**
13 Food Industry							1																								**1**	**1%**	**98%**
14 Pharmaceutical Industry								1																							**1**	**1%**	**99%**
15 Transport Industry		1																													**1**	**1%**	**100%**

Appendix 8: Categorisation of Emergency Unplanned Events

	Emergency Unplanned Events	Occurrence	Category	Total	Percentage	Cumulative Occurrence Frequency (%)
1	Project Delivery Issues	18	Project			
2	Project Scoping Issues	14	Project	32	31%	31%
3	Financial Impact	9	Operational			
4	Key Process Indicators Not Met	8	Operational			
5	Operational Data Issue	6	Operational			
6	Reduction in Output	4	Operational			
7	Supply Chain Issues	4	Operational	31	30%	62%
8	Team Personnel Changes	1	Personnal			
9	Management Issue	9	Personnel			
10	Resistance To Change	6	Personnel			
11	Employee work to rule	3	Personnel			
12	Internal Complaints	2	Personnel			
13	Confirmed Links to Competitor	1	Personnel	22	22%	83%
14	Customer Complaints	11	Customer	11	11%	94%
15	Rumours were heard	3	External Influence			
16	Political Unrest	2	External Influence			
17	Threat against consultant	1	External Influence	6	6%	100%
	Totals	**102**		**102**	**100%**	

Appendix 9: Trigger and Signal Identification – Supporting Quotations

Trigger and Signal Identification		Change Agents' Quotes	Change Agents' Quotes
1	**Project Delivery Issues**	I wasn't going to get any support from my chief executive. He made it very clear and I spoke to my line manager whom I actually got on very well with and we discussed an alternative approach. [CA16]	We have technical issues, because those plans were not well managed. [CA22]
2	**Project Scoping Issues**	There was a time gap between the blueprinting and the implementation phases. I remember a six- or an eight-month gap. A lot had changed in the process and the blueprints were no longer valid. [CA05]	I went to Shannon and discovered that there wasn't just one type of the clip; there are many types of clip in the ceiling –of different dimensions. [CA18]
3	**Customer Complaints**	Social media had starting to identify the problem: there is no point in going to this gallery. [CA14]	We started to receive warning letters from the owner and there was a chance they would cancel the project immediately. [CA27]
4	**Financial Impact**	The project has been initiated because, staff costs increased from 12 per cent to two 19 per cent. So, our MD and CEO … requested to reduce that … percentage and to nominate … an outside consultancy to study that. Basically, this study was, about productivity and cost optimisation of the or staff. [CA05]	If I go back and just go through the steps, the problem was it wasn't selling. We couldn't understand why he wasn't selling. It was only the fact that I spoke to some people. The message wasn't clear. Right. The message was very unclear. [CA14]
5	**Management Issue**	I quickly learned that this was the second failure. It was almost the anniversary of the first fire. And, I also discovered that not much had been done. There was no cost analysis. And, there was order placed for new equipment. [CA22]	The owner started to get involved in the project. It was a small company. That's where everything broke down in the project. He wanted to communicate with everyone, which was not necessary. [CA24]
6	**Key Process Indicators Not Met**	The issue they had in supply chain was [that] they frequently would have a stock out or parts. [CA08]	I would normally get maybe two cases a day and that's around 40 a month. But, we started to see an increase in the number of cases. Due to the event of storms, they increased to 40 a day. [CA15]
7	**Operational Data Issue**	We received the data from the concerned divisions to do the assessment for them. There was an issue with the data accuracy. It was exaggerated and some of it was actually missing. [CA04]	Our systems were so old that we could not run useful data cleansing reports. This meant we could not run accurate statistical reports for the departments. [CA19]
8	**Resistance To Change**	There was resistance from the users of the existing system to moving on to a new software system. [CA11]	We argued about everything: every single new feature that we showed them. It took a long time to get the buy-in from that team. [CA28]

Appendix 10: Mitigation Effort – Supporting Quotations

Mitigation Effort		Change Agents' Quotes	Change Agents' Quotes
1	**Change Project Plan**	Then there's another woman who does marketing with us. People all come back to the same thing. Nobody was going into it. They all thought it was the Stanleytones reading a 40-minute poem. [CA14]	We had to involve the legal department. They reviewed the whole contract and at the end we terminated the contract in quarter four. [CA24]
2	**Confirm Problem**	It was … internal customer complaints. We validated those complaints by going in and doing a complete assessment in the fleet and validating the productivity and the lead times. [CA05]	I explained the situation to him. He confirmed [that we should] back the action we took and this was correct action. [CA01]
3	**Data Analysis**	We basically sieved it through for errors to [see if it made] sense based on the position [and] based on the expected qualifications, and then validated that with employee files. [CA10]	We're getting ready for go live and bang – three turnarounds in a row. We [were] back up to 50+ hours and [it was] devastating to the team. Really disappointing after the hundreds of improvements and changes that had been made; and [it] transpired that in each of those three turnarounds, there was a once off, never before [had we seen such a] big technical issue. [CA07]
4	**Assessment of Processes**	One of the key ones was reviewing all of the different types of sourcing events and trying to standardise them because there was no standardised procedure for how to source [the] different guidelines. [CA06]	You had to go in and understand why these things were happening and then come back and, you know, try to get it fixed. We used to sit down here 12 o'clock at night for about more than a fourth grader. [CA29]
5	**Confirm Ineffective Approach**	We have discussed this issue with the EVPs. We … raised the issue with the MD, as we have found out that in some of the areas the numbers were not correct, and we know that from our experience of the business. [CA05]	So, it turns out that the design of the crimping fixture was the problem. My hand strength over the course of a day would drop off. I could do two, three or four, but after doing 50 or 60, my hand was getting tired. [CA20]
6	**Ineffective Management**	I would become the temporary project owner, as well as the facilitator. And secondly, I worked with the manager to mentor and coach him in the capacity to resolve the issue that [were] on the table. [CA07]	I scrutinising the reports from the contractors. We validated gaps in their reporting calculations which were not being highlighted by our management team. [CA27]
7	**Communication of Approach**	The solution we felt was to give feed back on all the problems to the nurse. The nurse and doctors put all their information up on the system, and they installed the system. We gave them feed back on the problems and they need to meet with occupational health department. [CA19]	First I informed the department heads and the divisional coordinator, plastic people that they are involved with this. I explained … why we were doing this. [CA21]
8	**Meeting with Client to Fact Find**	I dealt with the issue indirectly by speaking to the senior manager in the area and getting him to talk to a representative on the board. This was to inform him we needed to make a change. [CA01]	That's when we had to sit down with management and explain the pros and cons of each method. But, getting approval from the various divisions would be very challenging, because their job families would span multiple divisions. [CA10]
9	**Acknowledge Problem**	I also advised the CIO that we were in a bit of a difficult situation here and that I was performance monitoring the supplier for the next month. [CA09]	This is not really the way the meeting is conducted. You have to be respectful. You have to speak softly and professionally – not yell at each other – and you have to give everyone an opportunity to speak. So, we tried to adjust from then. So, for us it was a good cultural learning. [CA28]
10	**Production Problem**	People need to be in turning for every activity, every configuration meeting; and they need to basically keep decent records of what's agreed. [CA09]	So, what we had to do was to create a test environment that looked like production and test it that way. [CA13]

Appendix 11: Response – Supporting Quotations

	Response	Change Agents' Quotes	Change Agents' Quotes
1	**Process Assessment and Improvement Activities**	We went back and reviewed all the min/max levels of the stocks. We got rid of obsolete stock, that had parts which has never been needed. So, we scrapped those. Something as simple as tyres. We installed a consignment stock agreement on site. [CA08]	So, it took about three iterations of the brackets to get it right. And then we pushed it through production. We've a metal fabricator we work with, which produced the 500 sets of brackets required. [CA18]
2	**Minimise Impact**	My manager got the guys in the council finance department to stop a certain amount that was going to go into the 2020 team. The counsellor was paying them 6 million, minus the amount coming into the museum. [CA16]	We identified the problem and informed the manufacturing company immediately, as they needed to alter their process to eliminate the rejected products. [CA20]
3	**Change People's Behaviour**	I tried to deal with it myself, in isolation and I was struggling with engagement at a managerial level. These were low: I'd say 50% of the managers were very engaged – wanting to participate and wanting to get this done. 50% weren't. [CA06]	You show them the wow factor; and the impact, I suppose, and the delivery of the project at the time with that. It's little things. [CA28]
4	**Redefine Project Deliverables**	We spoke directly with the tyre supplier and they left stock onsite and they would charge as and when the stock was used on … consignment contracts, which worked exceptionally well. [CA08]	They disregarded everything that we did during the project, based on one person's decision. So, that was the most disappointing part of that project. We made all that effort with business and then they decided to go back to the old system. [CA28]
5	**Change Project Team**	The vendor promised three times that they [would] give us the right resource, as requested, to complete the project. [CA29]	We identified the problem then we reassessed the project. We put a plan together to revalidate the data. We then identified the team required to perform the validation of the data. [CA04]
6	**Escalate to Company MD or Owner**	We needed more portals and we needed the broken ones to be fixed. But, in a big organisation there is a big draw and a big demand on IT services. So, I approached an executive level, who got us to the top of the queue and then … we were number one priority for the IT fix. [CA07]	That's what we did and we got the senior people to come in and understand … the problem and our proposed solution. [CA07]

Appendix 12: Recovery – Supporting Quotations

Recovery		Change Agents Quotes	Change Agents Quotes
1	**Agree Project Closure or Outcome Activities**	So, we produced a comprehensive activity log showing the suppliers' shortcomings, in terms of not having a full and clear knowledge and understanding of their own product. [CA09]	We would attend a round table meeting with senior management, with credit, with finance, and security would be involved. So, the property analysts, the case managers, the customer managers and relationship managers were sitting around the table and the relationship manager would present three, four or five cases and a solution was found at that round table meeting. [CA12]
2	**Communication Plan to Gain Agreement**	We brought all the people involved into a workshop operation – and the company itself. We sat together, we discussed all the issues and started to tackle every single issue and solve it within the workshop. [CA05]	We had to sit down with this group of people and update the system for them. We had to show them, literally every day, doing their cases on their behalf until they took ownership. [CA29]
3	**Monitor of Reports and Performance Indicators**	The bottom line [was that] we [were] being hit by labour costs over a period about four or five weeks and we had to bring it back on track. [CA06]	First of all, we had a team monitoring for 48 hours until [the] TRS application went back up online and the business operated as normal. [CA13]
4	**Communication Plan**	We were charged with the managing of the project. We engaged engineers and interviewed a panel of builders. We needed to agree a specification for repair, and everything in accordance with the current bill and regulations. All the stuff that should have been done, [was done] correct[ly]. [CA15]	The level of reporting – the communication – has changed, because previously the contract content consultant or consultant contractor used to present the report to the client. We met and reinforced this old practice. [CA27]

Appendix 13: Learning – Supporting Quotations

Learning		Change Agents' Quotes	Change Agents' Quotes
1	**Improve Implementation Approach**	We obviously learned by mistakes in Scotland. We knew that we were going to have to do this in eight different sites. It was for a two-year period, so it was a long roll-out. [CA02]	The most important things in a project are … having a good framework, people engagement, understanding the people, and bringing the people with you. [CA07]
2	**Manage Project Scope**	If we [had] not resolve[d] the issue, the restoration plan would have taken days longer. [CA23]	We should have gone back at that point [in] time. We didn't do enough research, because we did not have time before the project started. But, during the project [we] did some benchmarking sessions. Then we understood our mistake[s]. [CA29]
3	**Manage Client Perception and Expectations**	I suppose never assume and be prepared. We'll never assume in a partnership. Never, never take anything for granted in a partnership. [CA16]	It was really a different culture. Although the project was short, from the client's engagement I learned so much. [CA27]
4	**Better Communication Plan**	You know, I need to be managing my relationship with the CIO and saying, you know, this is going to cause a problem later on, you know, and being a little bit more robust, you know, those, relationship things are vitally important. [CA09]	The awareness sessions should be done in a very informative and in a very cooperative manner, with the stakeholders, at the beginning, and we are completely transparent with them in terms [of] what we're going to use that information and how it would affect them both in a good and a bad way. [CA10]
5	**Better Client Involvement**	Some of the individuals will have chosen not to learn anything from the engagements. [CA06]	The management need to be involved, and this is true for any RP project: the management has to have a buy in, as in if you are leading a programme, large scale, and the management has to assert, has to ensure that if it is taken up and the expected result are achieved. [CA11]
6	**Better Project Team**	We needed a very diverse and cross-function[al] team to provide all the resources and the skills and inputs to resolve something that big. So, we drew on departments from all of the organisation to help us. [CA07]	We need an employee who [could] sit down, analyse where things [had gone] wrong, or try to take a decision on rectifying the data set, which [had] not [been] happening earlier. [CA29]
7	**Due Diligence**	We should have validat[ed] the data with them, rather than trying to do it all in one go and [then] be surprised by it. [CA01]	Here's where you have: critical spare parts related to a process. Make sure that it is watertight and there are checks and balances to ensure [that] stocks don't run out. [CA08]

Appendix 14: Alignment of Resolution Steps and Activities

Alignment of Resolution Steps and Activities

Trigger and Signal Identification	Category
Employee Work to Rule	Behaviour
Resistance To Change	Behaviour
Customer Complaints	Customer
Political Unrest	External Influence
Rumours Were Heard	External Influence
Threat Against Consultant	External Influence
Financial Impact	Operational
Key Process Indicators Not Met	Operational
Operational Data Issue	Operational
Reduction in Output	Operational
Supply Chain Issues	Operational
Team Personnel Changes	Personnel
Internal Complaints	Personnel
Management Issue	Personnel
Confirmed Links to Competitor	Personnel
Project Delivery Issues	Project
Project Scoping Issues	Project

Mitigation Effort	Category
Change Working Hours	Behaviour
Meeting with Client to Fact Find	Customer
Data Analysis	Operational
Assessment of Processes	Operational
Acknowledge Problem	Operational
Production Problem	Operational
Software Tools Assessment	Operational
Organisational Structure Assessment	Operational
Purchase Essential Components	Operational
Confirm Problem	Operational
Problem Solving	Operational
Ineffective Management	Personal
Communication of Approach	Personal
Replace Project Team Member	Personal
Cross-functional Team	Personal
Staff Skills Assessment	Personal
Change Project Plan	Project
Confirm Ineffective Approach	Project
Project Team Restructure	Project

Response	Category
Change People's Behaviour	Behaviour
Change Operational Working Hours	Behaviour
Process Assessment and Improvement Activities	Operational
Establish a Baseline	Operational
Data Analysis	Operational
Establish Incentive Scheme	Operational
Acceptance of Responsibility	Operational
Change Project Team	Personal
Escalate to Company MD or Owner	Personal
Removal of Manager	Personal
Change Project Working Hours	Personal
Increase Project Team Personnel	Personal
Minimise Impact	Project
Redefine Project Deliverables	Project
Handover Of Activities	Project

Recovery	Category
Gain Client Confidence	Customer
Monitor of Reports and Performance Indicators	Operational
Implementation of Restructured Teams	Operational
Implement Change in Working Hours	Personnel
Implement Incentive Schemes	Personnel
Agree Project Closure or Outcome Activities	Project
Communication Plan to Gain Agreement	Project
Communication Plan	Project
Enhanced Meeting Schedule	Project

Learning	Category
Manage Client Perception and Expectations	Customer
Better Client Involvement	Customer
Manage Customer Feedack Process	Customer
Due Diligence	Operational
Better Communication Plan	Operational
Enhanced Process Monitoring	Operational
Failure to Understand Training Population	Operational
Better Project Team	Personnel
Minimise Human Error through Process Controls	Personnel
Improve Implementation Approach	Project
Manage Project Scope	Project

Appendix 15: Resolution Steps and Activity Matrix

Trigger and Signal Identification		Mitigation Effort	Response	Recovery	Learning
Project	Project Delivery Issues Project Scoping Issues	Change Project Plan Confirm Ineffective Approach Project Team restructure	Handover of Activities Minimise Impact Redefine Project Deliverables	Agree Project Closure or Outcome Activities Communication Plan Communication Plan to Gain Agreement Enhanced Meeting Schedule	Improve Implementation Approach Manage Project Scope
Operational	Financial Impact Key Process Indicators Not Met Operational Data Issue Reduction in Output Supply Chain Issues	Acknowledge Problem Assessment of Processes Confirm Problem Data Analysis Organisation Structure Assessment Problem Solving Production Problem Purchase Essential Components Software Tools Assessment	Acceptance of Responsibility Data Analysis Establish a Baseline Establish Incentive Scheme Process Assessment and Improvement Activities	Implementation of Restructured Teams Monitor of Reports and Performance Indicators	Better Communication Plan Due Diligence Enhanced Process Monitoring Failure to Understand Training Population
Personnel	Team Personnel Changes Internal Complaints Management Issue Confirmed Links to Competitor	Communication of Approach Cross-functional Team Ineffective Management Replace Project Team Member Staff Skills Assessment	Change Project Team Change Project Working Hours Escalate to Company MD or Owner Increase Project Team Personnel Removal of Manager	Implement Change in Working Hours Implement Incentive Schemes	Better Project Team Minimise Human Error through Process Controls
Customer	Customer Complaints	Meeting with Client to Fact Find		Gain Client Confidence	Better Client Involvement Manage Client Perception and Expectations Manage Customer Feedback Process Carefully
Behaviour	Employee Work to Rule Resistance To Change	Change Working Hours	Change Operational Working Hours Change People's Behaviour		
External Influence	Political Unrest Rumours Were Heard Threat Against Consultant				

SECTION THREE:
DISCUSSION, CONCLUSION AND RECOMMENDATIONS

ABSTRACT

This research's discussion, conclusion and recommendations paper discusses the researcher's findings from the 29 interviews undertaken with experienced change agents. Following the research design methodology, the researcher extended their research findings by engaging with the interviewed change agents for a second time, requesting their comments on the revisited Conceptual Framework model and its alignment with the Resolution Steps and Activity Matrix. Moreover, the experienced change agents validated both the model and matrix developed. The researcher outlines the attributes of the developed reaction model. The emergency mitigation models of Boisvert and Moore (2003) and Pearson and Mitroff (1993) are linear in approach. This research study discuss the linearity of the reaction model developed, however, it also identifies the mitigation effort as portrayed by the experienced change agents as complex and can have many interactions between the steps. The use of the revisited Conceptual Framework model and the Resolution Steps and Activity Matrix as a practical tool for change agents in developing project plans and mitigating emergency unplanned events is discussed. Additionally, the researcher aligns the findings from this research study with teleological process theory and action learning theory.

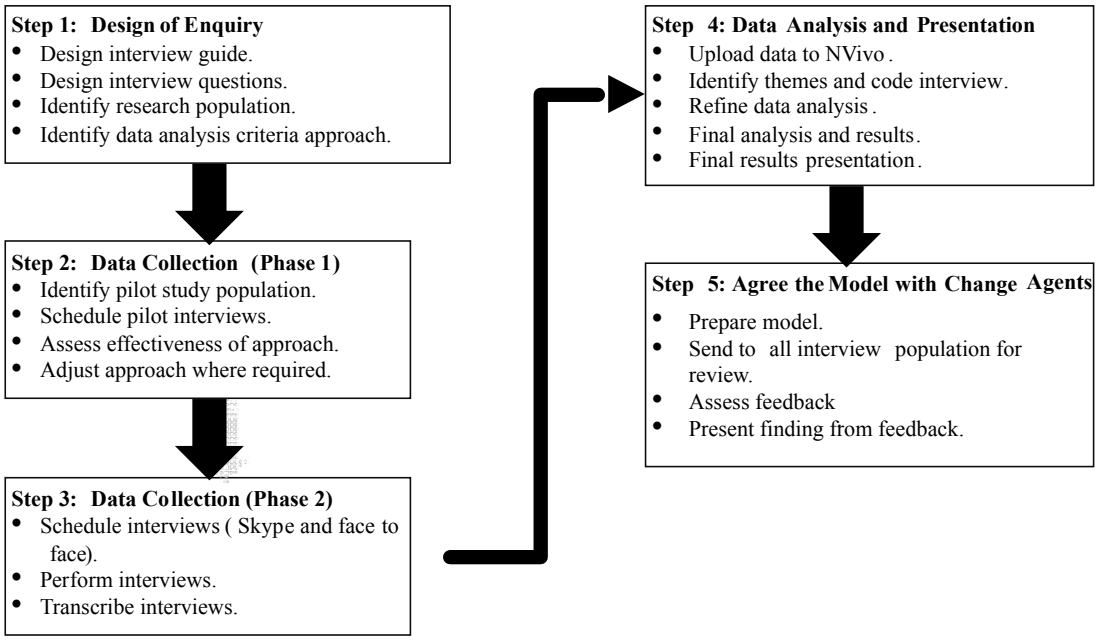
1.0 Introduction

This paper discusses the findings from Paper 4, formulates a thesis conclusion and highlights areas recommended for further research. Additionally, it discusses the findings from the data presented in Paper 4 and aligns the discussion with the research question and objectives. Furthermore, the researcher aligns the revisited conceptual framework (see, figure 2) and the resolution steps and activity matrix (see, Appendix 1). In addition, step 5 in the research design, in Figure 1, outlining the reengagement with the interviewed change agents and requesting their feedback on the revisited conceptual framework and the resolution steps and activity matrix developed. The reengagement process is outlined and the experienced change agents' feedback is discussed.

1.1 Discussion/Conclusion/Recommendations - Paper Approach

This paper aligns the processes used by experienced change agents to mitigate the impact of an emergency unplanned event in a planned operational change project as identified in paper 4 with the research question and objective. Section 2 outlines the reengagement with the interviewed change agents and discusses their feedback on the revisited conceptual framework and the resolution steps and activity matrix (see, Appendix 1). Furthermore, this approach is outlined in the research design step 5, figure 1. Section 3 aligns the research question and objectives with the research finding, additionally discussing their contribution to literature and practice. Section 4 discusses the contribution of this research to theory and professional practice. Additionally, it discusses the limitations of this research and the impact of the study on professional practice. It also presents the author's recommendations for further research.

Figure 1: Research Design

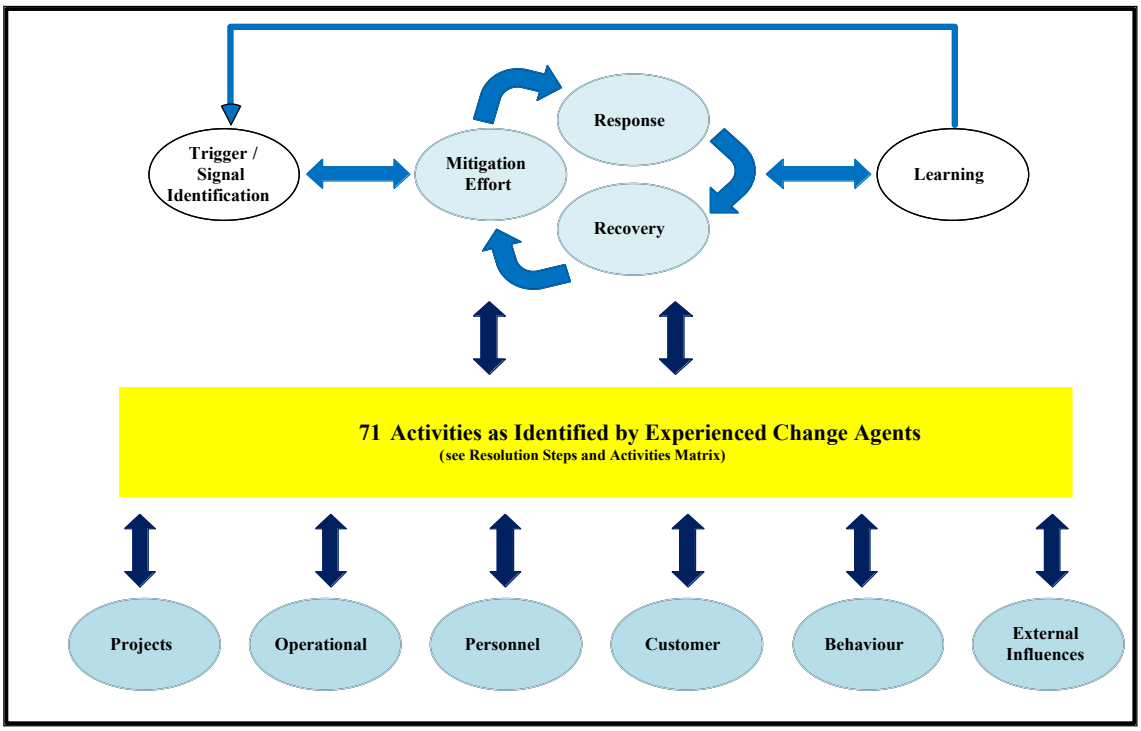


Source: Developed for This Research

1.2 Conceptual Framework Enhancement

In the research design figure 1, step 5, the researcher outlines a reengagement with the experienced change agents to gain their feedback on the revisited conceptual framework and Resolution Steps and Activity matrix developed. During the analysis of the experienced change agents feedback, CA17, highlighted a loop is required in the mitigation model contained in the conceptual framework, from learning to trigger/signal identification. The researcher agrees with this alteration and has included this loop in the conceptual framework in Figure 2.

Figure 2: Conceptual Framework



Source: Developed for This Research

2.0 Feedback on Conceptual Framework from Experienced Change Agents

The researcher endeavoured to enhance the findings presented in Paper 4 by reengaging with the experienced change agents and requesting their feedback on the revisited Conceptual Framework (see, Figure 2) and the Resolution Steps and Activity Matrix (see, Appendix 1). Additionally, the researcher asked the experienced change agents to review both documents developed as a combined tool which would potentially enable their mitigation of an emergency unplanned event in an operational change plan, from a practical perspective. This section discusses the researcher's preparation for his second communication with the experienced change agents and discusses the feedback from them.

2.1 Preparation for Second Interaction with Experienced Change Agents

To facilitate the reengagement with all 29 experienced change agents, the researcher developed six qualitative questions relating to the new Conceptual Framework and the Resolution Steps and Activity Matrix developed. The six questions (see, Appendix 2) were designed to facilitate the feedback from the experienced change agents on the

practical application of the proposed framework and matrix. The researcher contacted all 29 change agents who had previously participated in the research interview process and reconfirmed their willingness to participate in the proposed framework and matrix feedback communication. The researcher prepared a communication email with attachments informing the participants of what was required (see, Appendix 2). Due to the turmoil of the Covid-19 crisis, replies from the participants spanned 12 weeks. The researcher received a total of 16 replies from the 29 change agents contacted, all of whom answered the six questions fully. The researcher then designed a table aligning all responses from the change agents with these six questions (see, Appendix 3).

2.2 Discussion on Feedback from Experienced Change Agents

This section discusses the feedback from the experienced change agents, which was aligned with the six questions provided. All questions sought feedback from the experienced change agents on both the new Conceptual Framework and the Resolution Steps and Activity Matrix developed. The full alignment of the experienced change agents' responses to the six questions is available in Appendix 3.

2.2.1 Question 1: Can you give your opinion on the classification of the alignment of resolution steps and activities?

The majority of responses to Question 1 were clear and agreed with the alignment of resolution steps and activities. However, a number of change agents offered alternative alignments of specific resolution steps with categories. CA28, adds the comment:

> Ineffective management seems more like a trigger. Maybe the mitigation should be additional training or replacement. Production problem also seems more like a trigger.

While the researcher accepts the feedback from CA28, based on the emergency unplanned event under discussion, both categories were aligned correctly. Additionally, during the unplanned event where ineffective management was categorised as mitigation effort, the triggers for this event occurred when an internal complaint was raised concerning a project manager and their lack of team management skills when interacting with their team members.

On the second comment, where production problems were categorised as mitigation effort, the triggers for this event occurred when there was a reduction in manufacturing output. From the researcher's perspective, the categorisation of the activities is solely dependent on the type of emergency unplanned event that occurs and the approach of the experienced change agents.

CA21 discusses the inclusion of additional features to enhance the model developed:

> In the operational triggers, I think maybe you can add also quality/governance/compliance not met. Personnel along with management issue it can be also RACI issues related to the team [RACI is an acronym that stands for responsible, accountable, consulted and informed].

The researcher agrees with the comment from CA21 and believes that the findings included in this research study are limited to the data gathered and interpreted. However, both quality/governance/compliance and the RACI matrix have proved to be effective operational tools and may warrant inclusion in the future development of the model.

2.2.2 Question 2: Can you give your opinion on the classification of the resolution steps and activity matrix?

CA19 refers to external influences and highlights the omission of pandemic/extreme weather, stating:

> Again, in the external influence section as mentioned in Question 1, perhaps this should include pandemic/extreme weather. The latter has greatly impacted my organisation in the past.

As mentioned in Question 1, since pandemics/extreme weather were not discussed during the interview process, they are not included in the matrix discussions. However, in future investigations, both pandemics and extreme weather could be classified within the resolution steps and activity matrix.

The responses from CA22 and CA28 both have similar observations on the matrix, noting there are missing activities. CA22 states: "It can be seen that there are missing activities in certain resolution steps of a particular grouping"; and CA28 states*:*

> For external influences there is no mitigation or recovery. For certain events emergency response plans can be developed to minimise the business impact.

The researcher has endeavoured to elaborate and explain the format of the matrix (see, Appendix 2e). The activities for the trigger/signal identification step, remained aligned with the category of project, operational, personnel, customer, behaviour and external influences. However, for the remaining steps Mitigation Effort, Response, Recovery and Learning, the activities were not aligned solely with the separate categories as identified in the matrix. These activities could be used in a number of categories, depending on the emergency unplanned event that occurs. The matrix as presented illustrates this alignment

by aligning the trigger/signal identification activities with its identified category in separate boxes. Additionally, for the four steps, though the activities are aligned, they are not enclosed in a box, illustrating their transferability.

2.2.3 Question 3: Can you review the conceptual framework developed and give your feedback on its sense-making?

This question refers to the conceptual framework presented in Figure 2. The researcher observed, as per the two previous questions, that most respondents agreed with the developed frameworks flow and content. However, CA17 identifies an additional loop required in the model:

> Would it make sense to add a feedback arrow from learning back into mitigation effort, as you would apply learnings to new mitigation efforts? Or from learnings to business processes, as some business process may be amended as an output?

The researcher agrees with the suggested loop and has included it in the updated Conceptual Framework (see, Figure 2). Moreover, on reflection, the suggested loop is an important learning mechanism for the team involved in the operational change project, and is documented for future change teams. Additionally, CA20 agrees with CA17 and highlights the reasoning for the additional loop between Learning and Trigger/Signal Identification, stating:

> The learning aspect was not something I thought of but is of high importance. Especially to document the learnings if there is staff turn-over so the learnings are not lost.

CA13 further states:

> The model allows the team a framework to get systems up while also accounting for the issue and facilitating a permanent lesson learned and fix. It allows the support team responsible for maintaining services an organised approach to recovery.

This comment was well received, and the researcher agrees with CA13, as this is one of the key purposes of the model. Additionally, CA14 describes it as:

> A practical model that can help frame where you find yourself with regard to such events and then acts as a roadmap through complex situations.

Both CA13 and CA14 added reflective comments, which are pertinent to the future usage of the model by change agents.

2.2.4 Question 4: Do you believe that the conceptual framework developed can be used as a guide during an emergency unplanned event in a change plan? If so, in your opinion how?

This question refers to the model presented in Figure 2 and the classification of the resolution steps and activity matrix, as discussed in Section 2.2.2 above. The combination of the framework presented, and the classification of the resolution steps and activity matrix, are a core deliverable in this research. The experienced change agents' feedback gives a critical analysis of this development as a practical and usable tool.

The feedback from the experienced change agents was well received regarding the practical usage of the model developed. CA09 suggests that the tool can be used as a stakeholder communication tool to gain confidence during the emergency unplanned event, stating:

> This model would help regain control by directing the planning effort, and also as a communication tool to give stakeholders confidence that the correct responses are being considered.

However, CA06 adds "on-the-job" training as a requirement prior to the use of the model, which will ensure that:

> A clear understanding of the difference between mitigation and response is critical otherwise it could simply be sticking a Band Aid over the problem.

CA07 agrees with CA06 and says:

> I propose this addition: provide an example showing the activities actually taken for each step of the model along with the outcomes.

The researcher agrees with the valuable comments given, as they are pertinent to the practical deployment of the model in a live operational emergency situation. Furthermore, users of the model would require coaching on how to use the model developed. CA22 agrees with the model's structure but adds that the model could be used to map the emergency unplanned event for action and response, highlighting that the effectiveness of the model depends on the experience of the change agents; and that their speed of action is a key factor. CA16 offers a suggestion:

> If the sample triggers and their associated activities across the five steps could be read horizontally in accordance with the specific responses to that trigger it would be even more useful.

Though this comment was well received, the researcher stated that the alignment with the specific activities considered two factors: the mitigation step and the categories as

identified by Reijers and Mansar (2005). Where possible, the activities are aligned horizontally, although the researcher identified that several activities can be used across multiple mitigation steps and categories, as already stated.

2.2.5 Question 5: Does the model reflect and summarise your experience of the unplanned emergency event and your resolution steps? If so, in your opinion how?

The general consensus of the experienced change agents is that the model reflects their experience in their mitigation efforts of an emergency unplanned event. Additionally, both CA13 and CA16 suggest the importance of learning from the emergency unplanned event and suggests that "it reflects some of my experiences of unplanned events and clearly outlines and sets out the steps that can be taken towards resolution and learning". Similarly, CA20 and CA27 discuss the importance of the learning outcomes from the experience of emergency unplanned events, and claim that the learning factor improves the preparation following the emergency event. Furthermore, they state that the learning gained from experiencing the unplanned events first-hand is a key contributory factor in dealing with similar events in the future; and once they are made aware of the unplanned events that can occur, they are more vigilant when planning new operational change programs. In their critical analysis of their own experience of mitigating emergency unplanned events, CA22 discusses the lack of structure in their personal approach to the emergency unplanned events in comparison to the model developed, suggesting that the model gives structure and an easy alignment and review of steps and activities. CA28 highlights, from their personal perspective as a project management professional, that the model will cover most emergencies.

2.2.6 Question 6: In facing future emergency unplanned events, do you believe the model will be of assistance? If so, in your opinion how?

The overall feedback from the experienced change agents on the application of the model was very positive. Several change agents offered their advice in its introduction to change agents. CA01, for example, suggests that the model should be introduced as part of the project start-up process, guiding inexperienced change agents in a "table top" training exercise on the approach to dealing with unplanned events during the operational change project. CA28 agrees with CA01's suggested approach and adds that this training should be given to inexperienced project managers to guide their reactions, once the trigger has been identified and validated to the mitigation action required. Additionally, while CA07 agrees with the model's usage in mitigating emergency unplanned events, they suggest developing the example showing the activities actually taken for each step of the model along with the outcomes. The example could be presented in a simple table format. The

researcher accepts the suggestion of the use of examples to explain the activities and outcomes of the model, and this will be considered in the future.

CA19 highlights the need for organisation to recognise the possibility that unplanned emergencies will arise and that teams within the organisation will require training in how to mitigate them. Furthermore, they suggest that the framework in the model is a "useful tool that helps identify triggers and the process to follow when dealing with them". In addition, CA20 identifies the model as a tool to be used in the mitigation effort, so "that all appropriate aspects are looked at and key elements aren't neglected to look at". The researcher agrees with the comment and adds that the increased detail contained in the model will give greater support in the mitigation effort.

This section has discussed the feedback from the experienced change agents on the model developed. The researcher identified and highlighted a number of well-received comments, namely, the loop from learning to trigger/signal identification, which delivers key learning outcomes. Additionally, many other comments were given regarding the potential usage of the model, especially as a training tool, for inexperienced change agents and project managers.

3.0 Discussion – Theoretical Model

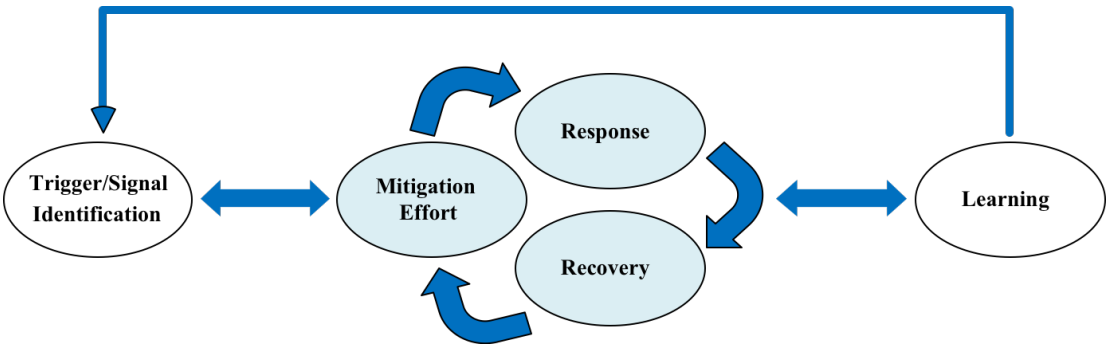
This section discusses the theoretical model and the components used to address the research question and the three research objectives in detail; and the data gathered from the change agents' experience is aligned to address the research question: *How do experienced change agents mitigate the impact of an emergency unplanned event in a planned operational change project?*

3.1 Theoretical Model Alignment

The initial theoretical model, as developed in Paper 1, Section 3.0, was revisited and redrafted due to the research findings in Paper 4, Section 6.0. However, after receiving the feedback form from the experienced change agents, as discussed in Section 2.0 above, the researcher further enhanced the model with the recommended loop from learning to trigger/signal identification (see, Figure 2). In developing the original model in Paper 1, the researcher used a combined model from both Pearson and Mitroff (1993) and Boisvert and Moore (2003). Additionally, in the literature both models are linear in approach, and

incorporate a link from learning to their initial mitigation process step. However, the model developed through this research can appear linear in simple mitigation efforts, additionally, in more complex mitigation efforts the researcher observed multiple interaction between process steps, see, figure 3. Furthermore, these interactions are in the form of verifying that the mitigation effort is a success, or that an alternative approach is required.

Figure 3: Mitigation Model Revisited



Source: Developed for This Research

3.2 Research Questions and Objectives

In Paper 4, Section 1.0, the researcher revisited the research objectives to be delivered from this research. This section discusses RQ1 and the three objectives and the data gathered to address the research question and fulfil the objectives.

RQ1. How do experienced change agents mitigate the impact of an emergency unplanned event in a planned operational change project?

3.2.1 Emergency Unplanned Events

This section discusses the unplanned events as experienced by the change agents during their planned operational change projects and delivers RO1.

RO1. To identify the emergency unplanned events faced by change agents during their operational change projects.

Carroll and Hatakenaka (2002, p.70) state "observers often label a crisis as financial, or technological, or as a failure of leadership, but the reality defies simple categories". This researcher found a similar pattern. The researcher identified 17 types of emergency unplanned events by the change agents, as illustrated in paper 4, section 3.4. From the categorisation of Reijers and Mansar (2005), all six categories appear in the emergency unplanned events table. The three prominent categories of operational, personnel, and external influences are identified as the common grouping from the researcher's

interpretation of the data gathered. The categorisations and identified initiators of the unplanned events from the researcher's perspective give a deeper understanding of what occurred. The literature gives clear definitions of an unplanned event in a change plan. Aaltonen *et al*. (2010, p. 566), for example, describe an unplanned event as "any event that can be considered as a deviation from the original project plan." Furthermore, Boisvert and Moore (2003) argue that an emergency is an abnormal situation requiring prompt action outside normal operational procedures, in order to limit damage to employees, property, or environment. Additionally, Snyder, *et al.* (2006) state an organizational crisis is an extraordinary condition that is disruptive and damaging to the existing operating state of an organization. Aligning these descriptions gives a clear understanding of an emergency unplanned event. However, the researcher argues, this investigation gives a deeper understanding to the emergency unplanned events and identifies what contributed to the abnormal situation whereas Aaltonen *et al*. (2010), Snyder, *et al*. (2006) and Boisvert and Moore (2003) do not provide details on the unplanned event.

Within the category of personnel, from the researcher's analysis of the data, the unplanned event was initiated through personnel issues or through lack of communication of operational changes. Similarly, in the category of external influence, from the researcher's analysis of the data, the unplanned event was initiated through outside organisational influences and initial unfounded rumours. In the three remaining categories of projects, behaviours and customer, from the researcher's analysis of the data, the unplanned event was initiated through a process failure or human error. From the emergency unplanned events identified, the main themes are process failure, human error, and outside organisational influences. The findings parallel those of Al-Dahash *et al.* (2016) and Richie (2004) who state an emergency unplanned event can affect an organisation's products, services, financial position, reputation, or employees in significant ways.

3.2.2 Mitigation Model

This section discusses the resolution steps used by the change agents to resolve the emergency unplanned event experienced during the operational change plan, as well as delivering on RO2a.

RO2a. To identify the resolution steps used by the change agents to resolve these emergency unplanned events.

As discussed in Paper 4, section 5, 80 per cent of all 29 participants (23 out of 29 interviewees) followed the five-step reaction model, with 20 per cent not following recovery and learning, or a combination of both. However, it is observed that Recovery and Learning, though used in 80 per cent of the projects, do not follow the normal model sequencing for the remaining 20 per cent of the projects. This section discusses the findings of the five step reaction mode of Trigger and Signal Identification, Mitigation Effort, Response, Recovery and Learning.

Trigger/Signal Identification

In the Literature Review, the researcher discusses the three steps in trigger/signal identification: the first step is scanning for signals; the second step is signal capture; and the third step is signal transmission. However, during the data analysis phase, the researcher can state that while all three stages can be used, their timeframe to complete the three steps can be minutes, a few hours, or a few days/weeks. Additionally, where an employee work-to-rule occurs, as discussed with CA01, the emergency unplanned event becomes more visible and obvious as work activities slow down. Although the three stages are completed during the trigger/signal identification, the same individual can complete all three stages. CA06, for example, on their review of project reports, realised that a key financial deliverable was not achieved by the client, which required a deeper understanding of the problem, thus moving the issue to the mitigation effort step. Additionally, CA03 discusses the development of political unrest in the country where their operational change project was occurring, and the three step process in that situation took several weeks to validate. However, the mitigation plan was developed in the interim, as a precautionary measure. Paraskevas and Altinay (2013) and Wang and Hutchins (2010) both identify a three step trigger/signal identification process. Furthermore, the researcher argues that through this investigation not all trigger/signal identification processes required three separate steps: in the instance with CA06, one step was sufficient to request a mitigation effort to be deployed. However, the researcher concurs with the literature, stating that in the majority of the emergency unplanned events investigated, all three steps were used in its identification.

Mitigation Effort

Sawalha *et al*. (2013), Wang and Hutchins (2010) and Pearson and Mitroff (1993) all refer to the purpose of the mitigation effort, and the steps involved in its resolution. However, their discussions do not give a deeper understanding of the potential outcomes. The researcher, through this investigation, identified five approaches which change

agents can adopt in their mitigation efforts. Furthermore, the researcher agrees with Boisvert and Moore (2003) who state that a mitigation plan should have two parts (one dealing with operations and the other with communications); an approach which is evident from this discussion. The researcher identified five common approaches to mitigating the effects of an emergency unplanned event during this research, as follows: (1) data analysis, process analysis and problem-solving to identify a response approach (this approach is identified where the problem is known, though a deeper understanding of the event is required to formulate a response); (2) communicating with the client and team members to identify a response to an emergency event (this approach is identified where the problem is known, though the response approach is unclear and requires agreement); (3) agreeing to change the project implementation timeline or change the project scope (this approach refers to the project team identifying a problem to the project implementation approach and requiring a change to mitigate the problem); (4) confirming that the problem exists and responding accordingly (this approach refers to the project team identifying a problem, though requiring confirmation from the client of the management team to develop the mitigation plan); and (5) changing the project team personnel to enhance the team's skills to implement the project. The five common approaches identified give a deeper understanding to the mitigation effort used by the change agents whom participated in this research than what has been presented in prior literature on crisis response and in project management.

Response

On reviewing the existing literature, the researcher found that both Boisvert and Moore (2003) and Pearson and Mitroff (1993) state that a response plan should include: an assessment of the current situation; the initiation of the operational plan; and the communications plan. Additionally, King (2002) states when dealing with an unplanned event it is important to identify what failed and why it failed, and that this information to be forwarded to the project team for assessment. The researcher agrees with the activities identified by these authors and adds that these three activities are included in the four response approaches identified from this research. However, the researcher also adds that due to this investigation a deeper understanding is available for change agents when preparing a response to emergency unplanned events in an operational change plan. From all the responses discussed and analysed, the researcher observed that a response plan was in place and communicated to the project team involved in the response effort. The response efforts were aligned with the mitigation effort, as this was the fact-finding aspect of the response effort and the development of the plan where the response effort is equal

to the implementation of the plans. Additionally, through the analysis process, the researcher identified several response approaches: (1) changes to the project team structure by changing personnel, increasing the skill sets of the project team, or increasing working hours; (2) changes in people's behaviour towards the new operational activities being implemented; (3) the client or consultant accepting responsibility for the emergency unplanned event, due to an error on their behalf, and agreeing to implement an appropriate response; and (4) the issue being raised with the company's managing director or owner, to enforce the required change, where the project team (internal or external consultants) was unable to implement the change project due to resistance from operational personnel or management. On reviewing the four approaches discussed above, the researcher identifies that responses are within the control of the organisation itself, or in collaboration with the external consultancy's implementation team. Furthermore, in approaches 2 and 4, the researcher identifies a lack of a change management approach embedded in the operational change plan resulting in the emergency unplanned event. Moreover, failures in operation change plans due to a lack of change management approach and awareness is highlighted in the literature (Kotter, 2007).

Recovery

There are two key aspects of the recovery step identified in the findings which are in line with the reviewed literature, stating that the purpose of the recovery step is to regain control after the emergency unplanned event, and to monitor the progress of the recovery (Sawalha *et al.,* 2013; Wang and Hutchins, 2010; Boisvert and Moore, 2003). However, though the literature reviewed highlights the key elements of recovery step, it fails to give the reader a deeper understanding of the key aspect of the recovery steps elements, as identified in this investigation. The researcher identified three key aspects of the recovery step, as follows: (1) communication plans to gain agreement and communicating the approach to recovery was a key component for many of the change agents in their recovery plan; (2) gaining clients' confidence by demonstrating the effectiveness of the operational change initiative; and (3) the change agents' increased monitoring of the change project's progress by expanding the reporting and monitoring of the projects, and enhancing the project meeting schedule for enhanced communication. This additional knowledge can guide future change agents in their endeavours to recover from an emergency unplanned event.

Learning

Pearson and Mitroff (1993) refer to this last phase of the emergency management model as one that requires adequate and critical analysis from the lessons learnt from the teams/personnel who experience the event, and the lessons and event to be documented and shared. While the researcher agrees with the recommendation of Pearson and Mitroff (1993), he found that during the 102 emergency unplanned events discussed and analysed, not one of the change agents had a formal documented process to record the lessons learnt from the emergency unplanned event. Furthermore, the entire knowledge of the event and the mitigation process remained solely with the team members and the operational management involved in the change project.

Pearson and Mitroff (1993), Wang and Hutchins (2010), and Sawalha *et al.* (2013) agree that the learning step should be a no-fault learning phase. However, the researcher, through the data analysis, can verify that in both the mitigation effort and response steps, the removal of personnel did take place, indicating that it was not a no-fault process. Moreover, tasks were recorded, such as replacing the project manager, project team members, restructuring the project team, and changing the project team. These changes arose because of the lack of required skills or competence among team members. In a comparison between the literature reviewed and this investigation, the researcher states that while agreeing with the literature with regard to documenting and sharing the experiences of the emergency unplanned event, this process was not evident during this research. Additionally, while the literature recommended a no-fault learning phase, this was not evident in reality from this investigation. Moreover, many projects changed the project team members for a multitude of reasons, including lack of required skills and competencies.

3.2.3 Resolution Activities

This section discusses the resolution activities used by the change agents to resolve emergency unplanned events experienced during their operational change plan. It also discusses how the research delivered RO2b.

RO2b. To identify the activities conducted by change agents in each resolution step to resolve emergency unplanned events.

The researcher interpreted the data gathered through this investigation and identified 71 activities conducted by the interviewed change agents in each resolution step to resolve emergency unplanned events. The researcher has stated throughout this paper that the literature fails to give a deep understanding of the activities involved in the mitigation

process outside of stating the steps involved or some personnel observations. The resolution steps and activity matrix developed give a detailed guide to change agents (see, Appendix 1). Enabling the emergency unplanned event to be aligned with the correct trigger/signal identification category, as well as enabling the change agent to identify the correct activities through the remaining mitigation steps. However, the activities identified and aligned in the matrix are limited to the study of 102 emergency unplanned events. The researcher argues that, though the activity listing is limited to this study, his review of the literature failed to identify a similar study in which change agents' activities and their efforts to resolve an emergency unplanned event in operational change project were discussed and identified. Furthermore, the researcher was unable to identify from the reviewed literature a guiding matrix that facilitates change agents through the mitigation steps in resolving an emergency unplanned event in a change plan, by means of a demonstrated successful activity list, as per the matrix developed.

However, the research does identify the factors to be considered when formulating implementing activities to resolve an emergency unplanned event. Choo (2005) states that management teams in organizations should be aware of biases in how information is used to make judgments. Additionally, Pearson and Clair (1998) outline the importance of team efforts in the mitigation process, which brings a variety of perspectives and skills. Though the researcher agrees with both Choo (2005) and Pearson and Clair (1998), managers need to understand both the implications of their decisions and the actions when preparing a strategic response (Epstein and Roy, 2001).

4.0 Conclusion and Recommendations

4.1 Introduction

The aim of this research is to explore the processes used by experienced change agents to mitigate the impact of an emergency unplanned event in a planned operational change project. To deliver this exploratory study, the researcher developed one research question and three research objectives.

4.1.1 Research Question 1

How do experienced change agents mitigate the impact of an emergency unplanned event in a planned operational change project?

RO1. To identify the emergency unplanned events faced by change agents during their operational change projects.

RO2a. To identify the resolution steps used by the change agents to resolve these emergency unplanned events.

RO2b. To identify the activities conducted by change agents in each resolution step to resolve emergency unplanned events.

The researcher answered RQ1 and delivered the three associated objectives by analysing the qualitative data generated from 29 interviews with experienced change agents. Moreover, during the interviews, 81 different change projects were discussed in 15 different industry sectors, which delivered a data-rich return that enabled the researcher to answer the research question.

4.2 Summary of Key Findings – Key Insights

This section identifies the key findings from the research.

4.2.1 Adherence to the Model

The five step mitigation model developed for this research is adapted from Boisvert and Moore (2003) and Pearson and Mitroff (1993). The researcher observed 80% of all 29 participants (23 out of 29 interviewees) followed the five-step reaction model. However, naturally the experienced change agents were unaware of the process steps undertaken and when questioned the change agents referred to their years of experience. Additionally, 20% failed to follow the mitigation steps of recovery and learning, or a combination of both. This level of adherence to the sequence of the five-step reaction model would infer that the model is still valid and is the process currently being used by most experienced change agents to mitigate emergency unplanned events in an operational change plan.

4.2.2 Linearity of the Model

The linearity of the model is discussed in section 3.1 of this paper. The original model developed for the Conceptual Framework, was adapted from Boisvert and Moore (2003) and Pearson and Mitroff (1993) which both appear to be linear. However, the model of Pearson and Mitroff contains a loop from learning to signal detection, whereas, that of Boisvert and Moore presents a loop from recovery to mitigation and preparedness. The researcher confirms the linearity of the model during simple mitigation efforts. However, during complex mitigation efforts the researcher observed, through the data analysis, multiple interaction between process steps, see, figure 3. Furthermore, these interactions are in the form of verifying the mitigation effort is a success, or an alternative approach is required. Through the review of the current literature the researcher was unable to identify a similar model with the interactions as identified in figure 3.

4.2.3 The Nature of the Planned Operational Change Project

In developing the Conceptual Framework, the researcher identified the nature of the operational change projects as an opportunity to gain insight into the change activities being undertaken within the organisations. The breakdown of the operational change projects was: customer focused 24 (30%); process improvement 23 (28%); automation 22 (27%); and cost optimisation 12 (15%). The customer-focused projects comprised a combination of initiatives dealing with the methods by which customers interact with the organisations themselves or back-office operations to improve their service delivery to customers. The primary focus for these initiatives was to increase the customer experience and enhance service delivery. While cost savings was not a driver for the initiative, where cost savings could be achieved, they were. The process improvement initiatives discussed were predominately twofold: first to improve the operations and speed of throughput; and second to reduce operational costs. These initiatives involved restructuring the working area to improve the effectiveness of the operation. The automation initiatives involved hardware and software implementation to reduce operational lead-time and costs. While these initiatives had the same goals as the process improvement initiatives, technology was the only mechanism used to achieve the agreed project deliverables. The cost-saving initiatives had the sole aim to reduce operational costs. These initiatives had pre-set targets and where technology was deployed to reduce costs, business cases were available. All of the discussed change projects had detailed project plans and timelines, a designated team, and regular project communications.

4.2.4 Emergency Unplanned Events

The researcher observed, during the 29 interviews, that 102 emergency unplanned events were discussed and recorded. In Section 4.2.3 above, the researcher stated that "all of the discussed change projects had detailed project plans and timelines, a designated team, and regular project communications". However, in analysing the emergency unplanned events, the researcher observed that the most frequent events to initiate the emergency unplanned events were process failure, human error, and influences external to the organisation. The events relating to process failure refer to failure in the project planning and implementation process, and the organisational operational processes. Additionally, failures in this category refer to errors in implementing plans effectively or errors in developing the project plans; and while this might involve an element of human error, there was more evidence of process-related error. In addition, during the change project, implementation failure in the organisational operational processes led to unplanned emergencies affecting the implementation of the change projects. These failures resulted

in project delays, project-cost overruns, and the occasional failure to meet customer deadlines. Events caused by human error were primarily associated with individuals who lacked the correct skills to perform the task required or assigned. Moreover, the individuals were primary, senior members of the implementation team. The researcher identifies that during the data analysis for both categories of process failure and human error, most unplanned events discussed were avoidable and were within the control of the project management or operational management teams. Additionally, the researcher argues that closer monitoring of the project implementation activities and team progress throughout the implementation could prevent many of the emergency unplanned events from occurring. However, in the case of influences external to the organisation on a change project, the project or operational management teams have no influence in preventing such an eventuality.

4.2.5 Developed Model and Resolution Steps and Activity Matrix

In redrafting the conceptual framework in Paper 4, Section 6, the researcher realigned the mitigation model with the data generated through this research study (see, Figure 2). Additionally, the researcher developed the resolution steps and activity matrix (see, Appendix 1). The researcher suggests the combined use of the conceptual framework and the resolution steps and activity matrix to guide change agents through the mitigation process. The model gives an overview of the mitigation process and the matrix guides the user, by giving insight into the mitigation steps and activities required to mitigate the emergency unplanned event in the operational change project. The researcher shared the conceptual framework and the matrix with the experienced change agents who participated in this research, asking for their opinion on the practical application of the model and matrix, and all agreed with its practical application, as discussed in Section 2.2.

4.2.6 Learning from the Experience

The literature reviewed for this investigation identifies learning from the experience of an emergency unplanned event as invaluable for developing the skills of the team mitigating the event or documenting the event and sharing the knowledge with other teams (Pearson and Mitroff, 1993). Additionally, during the interview process, all 29 experienced change agents interviewed indicated that learning from the experience was an opportunity for them and their team to develop skills and knowledge. Furthermore, they stated that documenting the emergency unplanned event and the mitigation process was key to educating future change teams. However, of the 102 emergency unplanned

events discussed with the experienced change agents, the researcher found that there was no formal documentation process for sharing the experience of the event. Additionally, all change agents agreed that the non-documentation of the process was an opportunity lost and that key knowledge was therefore unavailable to be shared.

4.3 Theoretically Informed Contribution to Practice

4.3.1 Contribution to Practice

This section discusses the contribution to practice provided by this researcher.

Linearity of Model

Through this investigation, the researcher has identified that, while the mitigation model illustrated and discussed in the literature can appear linear, additionally in practice in similar application, it can function as a linear model. However, in practice, and as discussed in this research, there can be multiple interactions between the mitigation steps (see, Figure 3). The new knowledge developed from this research will add to the practical application of the model, informing future change agents dealing with emergency unplanned events in an operational change plan of the many interactions involved when applying the model in practice.

Conceptual Framework and Matrix

A key output from this research is the development of the new conceptual framework and the resolution steps and activity matrix. These combined tools will guide change agents through their mitigation efforts in resolving emergency unplanned events in an operational change project. The researcher, on reviewing the available literature, was unable to locate comparable tools. However, the researcher shared the conceptual framework and the resolution steps and activity matrix with the experienced change agents, as discussed in Section 2 of this paper. The response from the change agents was very positive and it was agreed that the combination of the conceptual framework and the resolution steps and activity matrix would be a useful guide to change agents in the mitigation of an emergency unplanned event in an operational change project.

Change Management

The researcher discussed 81 change initiatives during the 29 interviews, as discussed in Section 4.2.4. Additionally, all change initiatives had detailed project plans and timelines, a designated team, and regular project communications. However, in the change projects

discussed, project process and procedures failed leading to the removal of ineffective project team members, a lack of communication, and ineffective operational management teams. In addition, the presence of ineffective operational management teams, as opposed to ineffective project team members further complicated the implementation of the change initiative and, in many cases, required the matter to be escalated to the senior management team to be resolved. In a seminal study, Kotter (2007) discusses his observations of more than 100 companies implementing change initiatives. He found that most of the observed change efforts fall between very successful and utter failures, with a tilt towards the failure side of the scale. This researcher found that Kotter's (2007) steps 1 (to establish a sense of urgency) and step 2 (to form a powerful guiding coalition) as two key issues observed during this study, as seen in the resolution steps and activity matrix (see, Appendix 1). The activities identified in the Resolution Steps and Activity Matrix refer to the failure in the change management process and highlights the activities undertaken by experienced change agents to mitigate the identified unplanned events. The researcher argues that the developed matrix has two functions in the change management process. First, the proven mitigation activities can be used by future change agents in developing change plans to identify potential issues and mitigate against their development; and second, in an emergency unplanned event, the developed matrix can be used by the change agents as a guiding tool to mitigate against the event that has occurred.

Project Management

While assessing the data from this research, the researcher identified project management activities as a key cause in the development of emergency unplanned events in an operational change plan. Additionally, two of the key trigger/signal events identified were project delivery issues and project scoping issues. Furthermore, these two functions are key elements in developing a change project plan. The literature has ample material on project planning and management, as discussed in Paper 1, where the researcher reviewed the literature from the Project Management Institute (2013); Maddalena (2012); Horine (2009); Callahan and Brooks (2004); Kemp (2004) and Heerkens (2002); and others. Additionally, the reviewed literature outlines the mechanisms required to prepare effective project plans and the management skills and techniques to guide the projects to a successful conclusion. However, the researcher argues that the current research can add a contribution to practice and guide change agents in their preparation to develop a change project plan; and, on the occurrence of an emergency unplanned event, it can guide them

in its resolution. The Resolution Steps and Activity Matrix (see, Appendix 1) developed for this research can serve as a tool to either make change agents' aware of what could go wrong, so that they can implement a risk management approach, or for enabling them to mitigate an emergency unplanned event when it occurs through the activities within the matrix.

4.3.2 Theoretical Underpinnings of Mitigation Model

The researcher identifies the main contribution to theory of the research as the refining of the mitigation model as identified in the original conceptual framework (paper 4, figure 1). The findings from this research challenge the linear lifecycle nature of this model. The model developed as presented in figure 3, is linear only in simple mitigation efforts. However, in complicated mitigation efforts the model loops a number of times in the "doing phase" to achieve the required result (Mitigation Effort; Response; Recovery). Additionally, from the data gathered from the experienced change agents, a greater understanding of the mitigation effort required to resolve an emergency unplanned event in an operational change plan has been achieved. Furthermore, through the feedback process with the interviewees, the researcher has amplified that the "doing phase" in the mitigation model may require multiple approaches to achieve the required mitigation result to resolve the emergency unplanned event. Within this section the researcher discusses the theoretical underpinnings of the model developed by this research under the following headings: teleological process theory and action learning theory.

Teleological Process Theory

Through this investigation, the researcher developed the mitigation model (see, Figure 3). The model developed is in contrast with the original mitigation model identified and used in the original conceptual framework (Paper 1, Section 3) adapted from Boisvert and Moore (2003) and Pearson and Mitroff (1993). The original mitigation model is portrayed in the literature as being linear, while the developed mitigation model (see, Figure 3) has multiple interactions within each of the five steps, as indicated. The researcher differentiates between life-cycle theory and teleological process theory, stating that life-cycle theory is linear and irreversible, following a unitary series of steps or phases that are cumulative (Van de Ven and Poole, 1995). Boddy *et al.* (2008) argues that, when progressing through the stage of life-cycle theory, each stage is necessary and should be signed off prior to moving to the next stage. The original model was adapted from Boisvert and Moore (2003) and Pearson and Mitroff (1993), who failed to provide their theoretical assumptions. This was developed for the conceptual framework (Paper 1,

Section 3) and is aligned with the characteristics of life-cycle theory, due to its linearity and the fact that the model follows a series of steps in sequence. In contrast, teleological process theory "does not prescribe a necessary sequence of events" (Van de Ven and Poole, 1995 p. 516). Van de Ven and Poole (1995) argue that teleological process theory is open to the modification of goals in a complex environment, also stating that there is a repetitive sequence of goal formation, implementation, evaluation and modification, based on what has been learnt by the team. Hickman (2010) argues that teleological process theory assumes there are many ways to achieve the goals and that the sequence of steps are not necessarily defined and predetermined. The researcher argues that the new mitigation model developed is aligned with teleological process theory (see, Figure 3). Additionally, as illustrated by the literature, the model follows the same characteristics as identified by Van de Ven and Poole (1995) and Hickman (2010). Moreover, through this investigation, the researcher suggests that the model can be linear when mitigating simple emergency unplanned events. However, in more complex events, the experienced change agents will require many interactions with the mitigation steps (as presented in Figure 3), which were not foreseen in the models developed by Pearson and Mitroff (1993) and Boisvert and Moore (2003).

Poole and Van de Ven (2004) describe teleological process theory as the change mechanism of purposeful cooperation, where like-minded individuals or groups act as a single purposeful and adaptive entity. A single goal is envisaged, and plans are made with tasks aligned to reach the goal (Van de Ven, 2007). During the data collection process, the researcher discussed the selection of the project team members and confirmed that their selection was based on skill sets and experience for the required positions. However, though the project team members were selected on this basis, a number of project team members needed to be replaced due to their lack of specific skills or experience. The researcher argues that, though like-minded individuals or groups act as a single purposeful and adaptive entity, this may not be sufficient for delivering a successful project, as pertinent skill sets and experience are essential to a project's successful delivery. Juntunen (2015) argues that teleological process theory as a sequence of events is structured in the following prescribed order: goal formulation, implementation, evaluation, and modification. Juntunen further states that each action sets the stage for the next and contributes to the final goal. The researcher differentiates between project feasibility evaluation and project progression evaluation. During the data-gathering process, the researcher observed that all projects, but particularly large-scale ones,

underwent a rigorous feasibility evaluation process to validate that the organisation's return on investment was secure. However, the researcher observed there was a lack of continued project evaluation on people performance and on individual assigned tasks. Additionally, the researcher observed from the data gathered that this lack of continued project evaluation led to a number of emergency unplanned events occurring.

The researcher argues that, though like-minded individuals are chosen at the initial stages of the project, a deep understanding of their skills and experience is required when selecting team members. Additionally, in achieving the common goal, the researcher identified a lack of intermittent evaluation of both the project team members and activities completed, to ensure that the project was adhering to the common goal.

Action Learning

Beard and Wilson (2013, p. 268) describe a learning set as providing a "formulised structure within which to encourage learning". Yeadon-Lee (2011) states that a learning set or group learns from one another and takes forward important issues with the support of others in the set. Weinstein (1990) outlines that, as the name indicates, action learning is learning through action and continually reflecting on the actions undertaken. De Loo (2002) describes action learning as centred around problem-solving group discussions of four to eight people who work on their own problems or those of other groups, using a set of predefined rules. Additionally, Chenchall and Chermack (2010) and Martineau and Hannum (2004) describe action learning as a collaborative process, whereby participants are exposed to real problems with learning support and develop workable solutions, while learning from their experience. Revans (1982) describes action learning as the continuous process of learning and reflection, while being supported by colleagues with the goal of getting things done. The researcher argues that the project teams as per this research, in their mitigation efforts of the emergency unplanned events, fulfilled the criteria as an action learning group or team (De Loo, 2002: Chenchall and Chermack, 2010: and Martineau and Hannum 2004). Furthermore, the project teams in a crisis situation, when dealing with an emergency unplanned event, seem to parallel how an action learning process is achieved. Schön (1983) describes reflective conversation as being triggered by a dilemma and involves a repetitive cycle of problem-setting, experimentation and repeating problem-setting. The researcher aligned the approach of the project team dealing with the emergency unplanned event as a learning set, using reflective conversation to identify the unplanned event, develop a mitigation plan, implement the mitigation plan, and repeat this development process, where necessary (Schön, 1983).

The researcher argues that both methods of reflection occurred in the projects teams' mitigation efforts to resolve the emergency unplanned events. The first is reflection-on-action where the reflection occurs after the event has occurred; and the second is reflection-in-action where the reflection occurs during the event (Schön, 1983). The type of reflection undertaken depends on the complexity of the emergency event occurred.
Beard and Wilson (2013) discuss the element of action learning as requiring four main processes. The first is the personnel who join the group voluntarily; the second, the learning set, is a group of people that meet; the third is the problem which requires resolution; and the fourth is the action which is agreed, taken and learnt from. The researcher aligns the findings of this research with action learning, stating that the processes used by the project team in their efforts to resolve the emergency unplanned event fulfil the four elements of action learning, as described by Beard and Wilson. Furthermore, each step of the five-step model developed, and the associated aligned activities (see, Appendix 1), highlights the attributes of agreeing the approach, taking the action, and the learnings from the action taken.

The researcher agrees with the description given by Chenchall and Chermack (2010) and Dilworth (1998) of action learning as an organisation-wide training and development mechanism. However, the present research discusses 81 different change projects with the experienced change agents, in which all team members gained knowledge from the experience of managing the emergency unplanned events. Moreover, the learning was contained within the project team only. As stated by all experienced change agents interviewed, there was no formal documentation process to record the mitigation effort deployed or the lessons learnt. Furthermore, while all change agents understood the value of the recording and sharing of the experience, they added that it was not common practice in their organisation. Additionally, the loss of this key knowledge highlights a gap in organisations' understanding of the importance of documenting and sharing the learning.

4.4 Recommendations

4.4.1 Impact on Professional Practice

To the researcher's knowledge, this is the first research study to engage experienced change agents in how they mitigate the impact of an emergency unplanned event in a planned operational change project. By undertaking this research, the researcher has identified the following four practices that can impact professional practice.

Firstly, in line with Research Objective 1, the researcher identified 17 emergency unplanned events that affected planned operational change projects. Furthermore, change agents planning for future change projects can avail of this research finding and be aware of the emergency unplanned events identified when developing their implementation project plans as a form of risk mitigation effort.

Secondly, in line with Research Objective 2a, through the investigation of the 102 emergency unplanned events that occurred, the researcher identified the processes used by experienced change agents in their effort to mitigate emergency unplanned events. Furthermore, the researcher discussed the interaction of the mitigation steps with each other, which can be simple or complex in nature. The mitigation model developed in Figure 3 and the discussion of the model's interaction steps can be used as a learning tool for future change agents.

Thirdly, in line with Research Objective 2b, the researcher identified 71 activities used by experienced change agents in their effort to mitigate an emergency unplanned event in operational change projects. Furthermore, the identified activities can facilitate the future preparation of mitigation plans by change agents where the 71 activities are aligned with the resolution steps.

Fourthly, the researcher revisited the conceptual framework, updating its content based on the new data collected during this research. The new conceptual framework guided the user through the new mitigation model developed. Additionally, the researcher aligned the identified mitigation steps and activities into a matrix, allowing the user easy alignment of activities per mitigation step and best practice alignment model, as per that of Reijers and Manssar (2005). Furthermore, the conceptual framework and resolution steps and activity matrix developed for the present research were validated by the reengagement of the interviewed change agents as working tools to guide change agents in their mitigation efforts of an emergency unplanned event.

4.4.2 Limitations

Methodology

In developing Methodology Paper 2, the researcher prepared a five-step research design approach (see, Figure 1). This approach guided the researcher in the approach to data gathering, data analysis, the presentation of findings, and the validation of findings from

the interviewed change agents. While the researcher deems the approach to be sound in application, the study is limited by the number of interviews conducted and the change projects discussed. Moreover, though the researcher identified 71 activities performed by experienced change agents, it is possible to further enhance and develop this list though future investigation. The researcher took an approach to incorporating business operations from national, multinational and governmental organisations. Furthermore, 15 different types of industries were discussed, identifying 81 change projects. The researcher took this approach to establish an exploratory understanding of the processes used by experienced change agents to mitigate the impact of an emergency unplanned event in an operational change plan.

Boundaries for Interpretation

The researcher identified two areas requiring the interpretation of data generated from this research study. First, on the initial review of the interview data, the researcher manually colour-coded the transcripts, highlighting the areas in the transcript that aligned with the five-step mitigation model, as identified in the conceptual framework (see, Figure 2). Second, once the mitigation steps were aligned, the researcher identified the activities conducted, per step, by the change agents and grouped similar activities. This avoided the duplication of activities per mitigation step. Furthermore, the two areas discussed rely solely on the researcher's interpretation of the events and their alignment. Brinkmann (2014) discusses that a qualitative interview relies on the interviewee's ability to remember any information honestly and accurately about their own life, circumstances, behaviours, opinions, or thoughts, in line with what the interviewer is seeking to understand. The researcher agrees and believes that throughout the interview process, the interviewees were honest and accurate in their explanation of the events that occurred.

4.5 Further Research

4.5 1 Recommendations for Future Researchers

On reflection of the output of this research study, the researcher has identified four areas for further research. Firstly, the current research could be extended, identifying further activities, adding to the 71 identified during this investigation and their alignment to the mitigation model. This will provide the change agents with more ideas on what activities should be carried out to mitigate the impact of an unplanned emergency event.

Secondly, during this research study, the researcher did not segregate the different approaches taken by change agents working in different types of organisations (national,

multinational, and governmental). The researcher suggests this as an interesting subject, as the outcome will depend on the level of the change agent's experience and training within the organisation's sector.

Thirdly, as with the different types of organisation, the researcher proposes an investigation into the approaches taken by change agents working in different industrial sectors, the current study included 15 different industry types.

Fourthly, the researcher identified that during the research into the 81 projects discussed, there was no formal documentation process to record the mitigation effort deployed and the lessons learnt. Further research into this topic would add to knowledge on action learning. The four proposed recommendations for further research are aligned with the current research study and would enhance the available knowledge, thus expanding existing approaches to mitigating emergency unplanned events.

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6.0 Appendices

Appendix 1: Resolution Steps and Activity Matrix

	Trigger / Signal Identification	Mitigation Effort	Response	Recovery	Learning
Project	Project Delivery Issues Project Scoping Issues	Change Project Plan Confirm Ineffective Approach Project Team restructure	Handover of Activities Minimise Impact Redefine Project Deliverables	Agree Project Closure or Outcome Activities Communication Plan Communication Plan to Gain Agreement Enhanced Meeting Schedule	Improve Implementation Approach Manage Project Scope
Operational	Financial Impact Key Process Indicators Not Met Operational Data Issue Reduction in Output Supply Chain Issues	Acknowledge Problem Assessment of Processes Confirm Problem Data Analysis Organisation Structure Assessment Problem Solving Production Problem Purchase Essential Components Software Tools Assessment	Acceptance of Responsibility Data Analysis Establish a Baseline Establish Incentive Scheme Process Assessment and Improvement Activities	Implementation of Restructured Teams Monitor of Reports and Performance Indicators	Better Communication Plan Due Diligence Enhanced Process Monitoring Failure to Understand Training Population
Personnel	Team Personnel Changes Internal Complaints Management Issue Confirmed Links to Competitor	Communication of Approach Cross-functional Team Ineffective Management Replace Project Team Member Staff Skills Assessment	Change Project Team Change Project Working Hours Escalate to Company MD or Owner Increase Project Team Personnel Removal of Manager	Implement Change in Working Hours Implement Incentive Schemes	Better Project Team Minimise Human Error through Process Controls
Customer	Customer Complaints	Meeting with Client to Fact Find		Gain Client Confidence	Better Client Involvement Manage Client Perception and Expectations Manage Customer Feedback Process Carefully
Behaviour	Employee Work to Rule Resistance To Change	Change Working Hours	Change Operational Working Hours Change People's Behaviour		
External Influence	Political Unrest Rumours Were Heard Threat Against Consultant				

Appendix 2 : Email to Change Agents

Dear Change Agent,

I hope this email finds you and your family safe and well during this time of crisis.

Thank you for your participation during the interview process. Your input was invaluable and added greatly to the data collected. I am now working on the second part of my data gathering. This involves gathering your feedback on my initial good-practice model and the development of the methodology, by asking you to answer the six questions below.

1. Can you give your opinion on the classification of the alignment of resolution steps and activities (see, Appendix 2d)?
2. Can you give your opinion on the classification of the resolution steps and activity matrix (see, Appendix 2d)?
3. Can you review the Revisited Conceptual Framework developed and give your feedback on its sense-making (see, Appendix 2b)?
4. Do you believe the resolution steps and activity matrix and the revisited conceptual framework developed can be used as a guide during an emergency unplanned event in a change plan? If so in your opinion how?
5. Does the resolution steps and activity matrix and the revisited conceptual framework developed reflect and summaries your experience of the unplanned emergency event and your resolution steps? If so in your opinion how?
6. In facing future emergency unplanned events, do you believe the resolution steps and activity matrix and the revisited conceptual framework developed will be of assistance? If so in your opinion how?

The attached word file will guide you through the development of the model and contains the appendices referred to in the above questions, which are also contained in the attached file that includes a comment box. Could you please return the file with your responses to the questions.

I would appreciate it if you could return the file within 14 days to enable me to complete of next part of my thesis.

Best regards,

Eddie Walshe

Appendix 2a: Model Development Approach

In developing the resolution steps and activity matrix, the researcher adopted the following approach.

Step 1: reviewed the alignment of all resolution steps and activities in detail gained from the data gathered during the interview process.

Step 2: aligned the resolution steps and activities to the six categories, as per best practice alignment for business process redesign (Reijers and Mansar, 2005) (see, Attachment 2c).

Step 3: developed a matrix containing the five resolution steps, the 71 activities aligned to the six categories, as per alignment of resolution steps and activities (see, Attachments 2d and 2e).

Step 4: reflected on the resolution steps and activities matrix and sketched an initial revisited conceptual framework (see, Attachment 2b).

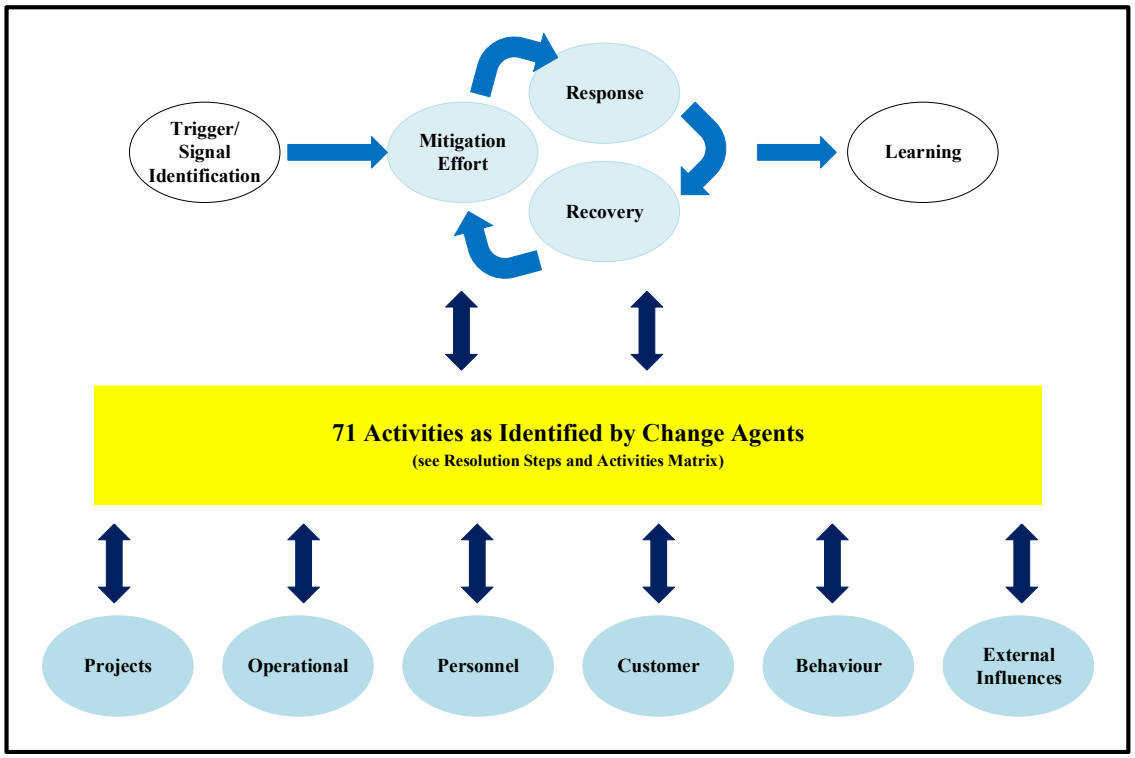
Step 5: reviewed revisited conceptual framework within a peer review group and redrafted the model.

Step 6: finalised the revisited conceptual framework for the thesis, as per the initial draft (see, Attachment 2b).

The resolution steps and activities matrix incorporates the five-step reaction model of trigger and signal identification, mitigation effort, response, recovery, and learning, as proposed by Pearson and Mitroff (1993) and Boisvert and Moore (2003). The researcher refers to the steps- mitigation effort, response, and recovery, as the 'doing' part of the model, whereby all the activities to minimise the effect of the emergency unplanned event are carried out. The 71 activities, as identified by the analysis of the data from the interviews of the change agents, comprises the approach used by experience change agents to resolve the emergency unplanned event. Furthermore, the researcher align the 71 activities with the six best practice alignment categories for business process redesign into the matrix, which refines the mitigation approach to the specific event (see, Attachments 2d and 2). However, the researcher included projects as a category, due to the nature of the investigation.

	Questions	Comments:
1	Can you give your opinion on the classification of the alignment of resolution steps and activities (see, Attachment 3)?	
2	Can you give your opinion on the classification of the resolution steps and activity matrix (see, Attachment 4)?	
3	Can you review the 'how to' model developed and give your feedback on its sense-making (see, Attachment 1)?	
4	Do you believe the 'how to' developed model can be used as a guide during an emergency unplanned event in a change plan? If so in your opinion how?	
5	Does the model reflect and summarise your experience of the unplanned emergency event and your resolution steps? If so in your opinion how?	
6	In facing future emergency unplanned events, do you believe the model will be of assistance? If so in your opinion how?	

Appendix 2b: Revisited Conceptual Framework



Appendix 2c: Best Practice Alignment

Best Practice Alignment – Business Process Redesign

Customer	Which focuses on improving contact with customers.
Business Process Operation	Which focuses on how to improve the workflow.
Business Process Behaviour	Which focuses on when the workflow is executed.
Organisation	Which considers both the structure of the organisation (mostly the allocated resources) and the resources involved (types and numbers).
Information	Which describes best practices related to the information the business process uses, creates, may use, or may create.
Technology	Which describes best practices related to the technology the business process uses or may use.
External Environment	Which tries to improve upon the collaboration and communication with the third parties.

Source: Adapted from Reijers and Mansar (2005, p.295)

Appendix 2d: Alignment of Resolution Steps and Activities

	Trigger/Signal Identidication	Category
1	Customer Complaints	Customer
2	Political Unrest	External Influence
3	Rumours Were Heard	External Influence
4	Threat Against Consultant	External Influence
5	Financial Impact	Operational
6	Key Process Indicators Not Met	Operational
7	Operational Data Issue	Operational
8	Reduction in Output	Operational
9	Supply Chain Issues	Operational
10	Employee Work to Rule	Personnel
11	Resistance To Change	Personnel
12	Confirmed Links to Competitor	Personnel
13	Internal Complaints	Personnel
14	Management Issue	Personnel
15	Team Personnel Changes	Personnel
16	Project Delivery Issues	Project
17	Project Scoping Issues	Project

	Mitigation Effort	Category
1	Change Working Hours	Behaviour
2	Meeting with Client to Fact Find	Customer
3	Data Analysis	Operational
4	Assessment of Processes	Operational
5	Acknowledge Problem	Operational
6	Production Problem	Operational
7	Software Tools Assessment	Operational
8	Organisational Structure Assessment	Operational
9	Purchase Essential Components	Operational
10	Confirm Problem	Operational
11	Problem Solving	Operational
12	Ineffective Management	Personal
13	Communication of Approach	Personal
14	Replace Project Team Member	Personal
15	Cross-functional Team	Personal
16	Staff Skills Assessment	Personal
17	Change Project Plan	Project
18	Confirm Ineffective Approach	Project
19	Project Team Restructure	Project

	Response	Category
1	Change People's Behaviour	Behaviour
2	Change Operational Working Hours	Behaviour
3	Process Assessment and Improvement Activities	Operational
4	Establish a Baseline	Operational
5	Data Analysis	Operational
6	Establish Incentive Scheme	Operational
7	Acceptance of Responsibility	Operational
8	Change Project Team	Personal
9	Escalate to Company MD or Owner	Personal
10	Removal of Manager	Personal
11	Change Project Working Hours	Personal
12	Increase Project Team Personnel	Personal
13	Minimise Impact	Project
14	Redefine Project Deliverables	Project
15	Handover Of Activities	Project

	Recovery	Category
1	Gain Client Confidence	Customer
2	Monitor of Reports and Performanc	Operational
3	Implementation of Restructured Tea	Operational
4	Implement Change in Working Hou	Personnel
5	Implement Incentive Schemes	Personnel
6	Agree Project Closure or Outcome A	Project
7	Communication Plan to Gain Agree	Project
8	Communication Plan	Project
9	Enhanced Meeting Schedule	Project

	Learning	Category
1	Manage Client Perception and Expectations	Customer
2	Better Client Involvement	Customer
3	Manage Customer Feedack Process	Customer
4	Due Diligence	Operational
5	Better Communication Plan	Operational
6	Enhanced Process Monitoring	Operational
7	Failure to Understand Training Population	Operational
8	Better Project Team	Personnel
9	Minimise Human Error through Process Controls	Personnel
10	Improve Implementation Approach	Project
11	Manage Project Scope	Project

Appendix 2e: Resolution Steps and Activity Matrix

	Trigger / Signal Identification	Mitigation Effort	Response	Recovery	Learning
Project	Project Delivery Issues Project Scoping Issues	Change Project Plan Confirm Ineffective Approach Project Team Restructure	Handover of Activities Minimise Impact Redefine Project Deliverables	Agree Project Closure or Outcome Activities Communication Plan Communication Plan to Gain Agreement Enhanced Meeting Schedule	Improve Implementation Approach Manage Project Scope
Operational	Financial Impact Key Process Indicators Not Met Operational Data Issue Reduction in Output Supply Chain Issues	Acknowledge Problem Assessment of Processes Confirm Problem Data Analysis Organisation Structure Assessment Problem-solving Production Problem Purchase Essential Components Software Tools Assessment	Acceptance of Responsibility Data Analysis Establish a Baseline Establish Incentive Scheme Process Assessment and Improvement Activities	Implementation of Restructured Teams Monitor of Reports and Performance Indicators	Better Communication Plan Due Diligence Enhanced Process Monitoring Failure to Understand Training Population
Personnel	Team Personnel Changes Internal Complaints Management Issue Confirmed Links to Competitor	Communication of Approach Cross-functional Team Ineffective Management Replace Project Team Member Staff Skills Assessment	Change Project Team Change Project Working Hours Escalate to Company MD or Owner Increase Project Team Personnel Removal of Manager	Implement Change in Working Hours Implement Incentive Schemes	Better Project Team Minimise Human Error through Process Controls
Customer	Customer Complaints	Meeting with Client to Fact Find		Gain Client Confidence	Better Client Involvement Manage Client Perception and Expectations Manage Customer Feedback Process Carefully
Behaviour	Employee Work to Rule Resistance To Change	Change Working Hours	Change Operational Working Hours Change People's Behaviour		
External Influence	Political Unrest Rumours Were Heard Threat Against Consultant				

Appendix 3: Change Agents Feedback on Model Developed

		Q1	Q2	Q3	Q4	Q5	Q6
		Can you give your opinion on the classification of the *alignment of resolution steps and activities* (see Appendix 3)?	Can you give your opinion on the classification of the *resolution steps and activity matrix* (see Appendix 4)?	Can you review the 'how to' model developed and give your feedback on its sense-making (see Appendix 1)?	Do you believe the *'how to' model developed* can be used as a guide during an emergency unplanned event in a change plan? If so in your opinion how?	Does the model reflect and summarise your experience of the unplanned emergency event and your resolution steps? If so in your opinion how?	In facing future emergency unplanned events, do you believe the model will be of assistance? If so in your opinion how?
Sr.	**Code**						
1	**CA01**	Seeing this as discrete lists in isolation, the activities align perfectly and logically.	Seeing this as a 'whole', the activities and steps still align. However, in a complex, fluid and unpredictable situation the alignments are not as easily defined and are contextually dependent.	Crystallises, focuses the relationship of processes "in the midst of dealing with the event". Focuses on "dealing" with the event once identified, resolved, and then adds in the learning. Customer – I see as both internal and external or "stakeholder" – External — the change agent or team can influence these events.	Yes – definitely – enables aligned focus on resolving and aligning complex events to get the team / involved staff on the same page quickly.	Yes – as in it is what I have done in my experience – this just simplifies, frames and diagrammatically represents it.	Yes 1. As a common awareness and preparedness - part of the project start up process 2. Table-top training exercises for novice staff – refresher for more seasoned staff 3. Giving people a simple crash course on a way for dealing with unexpected events
2	**CA02**						
3	**CA03**						
4	**CA04**						
5	**CA05**						
6	**CA 06**	Is threat against consultant and external influence or should it be a personnel or behaviour category? Mitigation & response – personnel instead of personal pitigation – project team restructure categorised as project, but replace project team member is categorised as personnel? response – change operational working hours categorised as behaviour; should it be operational? recovery –change in working hours is classified as personnel but under mitigation is classed as behavioural? Recovery – implement incentive scheme is categorised as personnel but operational under response	Agreed	Agreed - although maybe there should be something about sometimes mitigation could also be response (if you're lucky!)	As long as the individual managing the unplanned event had been coached and trained in the model prior to the event rather than learning 'on the job'. Ensuring a clear understanding of the difference between mitigation and response is critica,l otherwise it could simply be sticking a Band Aid over the problem.	In some respects, although Lean talks about containment of an issue and then a longer term counter measure to fix the problem. Sometimes the program and events move too fast to make a clear distinction between the various stages until after the event.	The key stage is the trigger and signal stage. In most cases this is obvious, but larger, slower-moving or more complex programs may not be quite as easily understood and there are not the appropriate methodologies to highlight when something changes then mitigation will be a lot more difficult. Breaking the process of unplanned change down into clearly defined steps enables the stages easier to define and understand and therefore easier to manage
7	**CA 07**	It would appear that the 'Resolution Steps' are the 6 different categories for the 71 'Activities'. On this basis I can see the logic behind the classification.	It would appear that this Matrix is the same data and categorisation from Appendix 3 but the layout and formatting are different. This layout and format has a good flow and makes it much easier to follow the 'Activities' across the steps of the how to Model.	The components or steps of the How to Model are clearly presented in the diagram. To enhance the clarity of the model may I propose that you insert definitions or simple explanations for the 3 'Doing Steps': Mitigation Effort, Response & Recovery. Additional clarity could be provided by commenting on the 'circular' presentation of the 3 'Doing Steps' i.e. is this an iterative cycle within the model?	Yes, the how to Model can be used as a guide during an emergency unplanned event. To make it immediately effective in an emergency situation I propose this addition: provide an example showing the activities actually taken for each step of the model along with the outcomes. The example could be presented in a simple table format.	The model does reflect my own experience. When I have experienced evidence of an unplanned emergency (Trigger), I have taken immediate steps to prevent the situation from getting worse (Mitigation), agreed the changes with the relevant stakeholders (Response), communicated and implemented corrective measures (Recovery) and documented the lessons learned (Learning).	Yes, the how to Model can be used as a guide during an emergency unplanned event. To make it immediately effective I propose this addition: provide an example showing the activities actually taken for each step of the model along with the outcomes. The example could be presented in a simple table format.
8	**CA 08**						
9	**CA 09**	The classifications appear logical and correct. I think they are reasonably aligned to the categories.	This classification too, is logical and correct. Resolution steps are aligned correctly to the activities.	What the how to Model tells me is that a trigger/signal indicates the need for mitigation effort, which in turn triggers a response. This drives recovery (between the mitigation effort and the response, there is also learning). The recovery feeds back into mitigation effort, as a loop. The provenance for this model is the 71 activities identified by change agents across the 6 functional areas listed. Yes, it makes perfect sense to me.	Yes, I do. Frequently in situations of change where emergency unplanned events occur, change agents are reacting to the new situation they find. This model would help regain control by directing the planning effort, and also as a communication tool to give stakeholders confidence that the correct responses are being considered.	Yes, this is a good model summary of all the examples on which I was interviewed. It reflects my experience that a signal triggers mitigation effort, a response, recovery, then further effort. Also, learning!	Actually I do. Using a model like this with stakeholders would show them you are in control, would develop confidence, and would be a useful indicator of where you currently are in the process and what further needs to be done.
10	**CA 10**						
11	**CA 11**	Yes I agree with the classification of the *Alignment of Resolution Steps and Activities*	Yes I agree with the classification of the *Resolution Steps and Activity Matrix*	Yes I have reviewed the model and given my feedback in the attached file	Yes I believe that the model can be used as a guide during an emergency unplanned event. I have detailed the same in the attached file	Yes it does and the same has been detailed in the attached file	Yes it will be of assistance for sure

Appendix 3 contd.: Change Agents Feedback on Model Developed

		Q1	Q2	Q3	Q4	Q5	Q6
		Can you give your opinion on the classification of the *a lignment of resolution steps and activities* (see Appendix 3)?	Can you give your opinion on the classification of the r*esolution steps and activity matrix* (see Appendix 4)?	Can you review the 'how to' model developed and give your feedback on its sense-making (see Appendix 1)?	Do you believe the *'how to' model developed* can be used as a guide during an emergency unplanned event in a change plan? If so in your opinion how?	Does the model reflect and summarise your experience of the unplanned emergency event and your resolution steps? If so in your opinion how?	In facing future emergency unplanned events, do you believe the model will be of assistance? If so in your opinion how?
Sr.	**Code**						
12	**CA 12**						
13	**CA 13**	Yes , allows for a new way of deep diving into issue resolution and reducing the negative impact .	Yes, allows for standard process approach for investigation and issue resolution – you also have all the impacted groups part of the communication and recovery steps. On reviewing the 70 steps it is comprehensive.	Allows the team a framework to get systems up while also accounting for the issue and facilitating a permanent lesson learned and fix. It allows the support team responsible for maintaining services an organised approach to recovery.	In my experience as a change agent that can inadvertently cause an issue trigger, this process immediately can be used to get the investigation started. This model also facilities a process to engage the key players who can enable change. Adding an owner or point of contact for key categories will enhance the time to acted and get alignment. Good communication tool.	Yes, in my experience a 'unplanned Down Time' triggers a global meeting for all impacted teams (or a rep from each team). This model provides a framework to ensure quick root cause analysis and fix. In addition, it incorporates the value of lessons learned and permanent fix is applied.	Yes, we would typically incorporate this into our planned response framework while tracking the time duration between phases. We could add a target resolution time per phase and track the items to closure. We would go as far as to evaluate how the use of this tool can ensure a permenant fix is applied in a timely manner, to avoid future impact . This can be added to the value improvement targets for a section or team.
14	**CA 14**	It offers a clear and informative classification that delivers a very practical categorisation of the steps involved.	Offers an informative and concise categorisation that can help identify where one is in the process and offers appropriate actions that facilitate progress through the model.	A practical model that can help frame where you find yourself with regard to such events and then acts as a roadmap through complex situations.	I do believe the model can be used for this purpose. It can identify where one is in the process and provides a roadmap to a successful conclusion.	It very much speaks to my own experiences with regard to emergency unplanned events. I can identify with the stages outlined in bringing a number of unplanned events to a conclusion.	The model will be of assistance. It can provide a structured approach as to how the event and its impact can be navigated and the situation successfully resolved.
15	**CA 15**						
16	**CA 16**	The alignment of resolution steps and activities table is very useful as it clearly identifies the range and classification of potential and real problems and in what part of the operational model the resolution can be found	This proposes a clear and coherent matric of steps and activities across the five resolution steps. However, it is unclear in the mitigation box if the activities should be read vertically or horizontally (sequential)	The model is comprehensive, clear and practical.	It is a very useful guide as it offers practical and coherent steps towards resolution and learning. If the sample triggers and their associated activities across the five steps could be read horizontally in accordance with the specific responses to that trigger – in Appendix 4 – it would be even more useful.	Yes: it reflects some of my experiences of unplanned events (many of mine relate to environmental control issues and are therefore beyond the scope of this study!) and clearly outlines and sets out the steps that can be taken towards resolution and learning.	Yes: the model would be of great assistance particularly in the identification of the five steps across the six operating areas. A further alignment of the proposed activities in response to the triggers would be of great benefit.
17	**CA 17**	Could implementation of restructured teams be in the personnel category? You have category personnel and personal - should they all be personnel? Might any changes to working hours fit better under the operational project category? Not sure what you mean by a better project team – i.e., is it better because it is restructured, people added? Would the learning be more appropriately described using some other words align project team structure and skills to meet project objectives ??? Thats a bit long winded!	Again the project category feels odd as a category to me.	Makes sense as a model to me ! Would it make sense to add a feedback arrow from learning back into mitigation effort, as you would apply learnings to new mitigation efforts? or from learnings to business processes, as some business process may be amended as an output?	Well, we all certainly have an emergency unplanned event on our hands right now with Covid-19. So ye,s I can see how the model can be used in that scenario. In Boston there are many different mitigations currently in progress. The organisation could be said to be using your model on a daily basis and taking different responses, in an attempt to enable the business to recover.	I think so for the most part – but am not sure exactly what you mean by handover of activities ?	Yes: see answer to No 4.
18	**CA 18**						
19	**CA 19**	Yes, the resolution steps and activities have been clearly identified and classified appropriately under the headings developed by the researcher.	Again in the external influence section as mentioned in Q1 perhaps this should include pandemic/extreme weather. The latter has greatly impacted my organisation in the past.	The How to Model is clear and concise with the learning outcome being an essential component to ensure better outcomes in any future emergencies.	The how to Model provides a very good framework for emergencies and unplanned events. Obviously events that are unplanned are costly to the organisation as is dealing with them. The resources required can be difficult to source at short notice in particular Human Resources , this can require short term redeployment of personnel and up-skilling /retraining of existing personnel. If specialist training is needed…..how best to deal with that aspect of an unplanned event at short notice? This is where the learning part of the model comes into play.	Yes, to some extent. However, in large public funded organisations change is typically slow and resistance to change is a problem in itself; because of this decision making and outcomes can be delayed leading to crucial time loss. In the health sector this can have extreme human affects.	Organisations need to recognise the possibility that unplanned events/emergencies will arise, they need to learn from previous situations and develope procedures to deal with these. The framework in the How to Model is a very useful tool that helps identify triggers and the process to follow when dealing with them.
20	**CA 20**	Given the current situation globally (covid-19), should this be considered a trigger, ie: environmental/biological triggers such as extreme weather conditions/pandemics ….our dept had identified these in our emergency plan	The matrix is very clear and easy to cross reference.	The how to model shows a clear work-flow. The learning aspect was not something I thought of but is of high importance. Especially to document the learnings if there is staff turn-over so the learnings are not lost.	I do. I think it could be used with other models such as 5 whys or fish bone diagrams.	It does, I could see it being used as a tool to document and figure out what caused issues and to learn from it. And to use as a tool to prevent an issue.	I do, I feel the the matrix could be of assistance so that all appropriate aspects are looked at and key elements aren't neglected to look at.

Appendix 3 contd.: Change Agents Feedback on Model Developed

		Q1	Q2	Q3	Q4	Q5	Q6
		Can you give your opinion on the classification of the *a lignment of resolution steps and activities* (see Appendix 3)?	Can you give your opinion on the classification of the *resolution steps and activity matrix* (see Appendix 4)?	Can you review the 'how to' model developed and give your feedback on its sense-making (see Appendix 1)?	Do you believe the *'how to' model developed* can be used as a guide during an emergency unplanned event in a change plan? If so in your opinion how?	Does the model reflect and summarise your experience of the unplanned emergency event and your resolution steps? If so in your opinion how?	In facing future emergency unplanned events, do you believe the model will be of assistance? If so in your opinion how?
Sr.	**Code**						
21	**CA 21**	Classification is ok. In the operational triggers, I think maybe you can add also quality/governance/compliance not met. Personnel along with management issue it can be also RACI issues related to the team	The resolution steps are comprehensive	Just few clarifications. Mitigation effort is it related to mitigation analysis of the trigger? Response is the action? Why does recovery go back to mitigation effort?	Yes	Yes: the model reflects the steps and action taken to solve issues	Yes: it will help to identify the steps and agents to be analysed to solving the unplanned events.
22	**CA 22**	The classification of Appendix 3 is a logical step to sort all the identified activities into 5 resolution steps and further sort each activity into 6 groupings thus creating a matrix of activities.	The matrix provides a clearer view of the resolution steps in each grouping. It can be seen that there are missing activities in certain resolution steps of a particular grouping.	The model is logical and makes good sense. However, in solving any problem it may have to bridge the gaps between theoretical and practical environments	Yes: it can be used. The model structure can be used to map an emergency event for action and response. To be effective, the experience of the change agent and the timing/speed of action taken are key factors.	Yes, it does. Having said that, and if I can reflect back to the past, my resolution steps are less structured and relying much more on my experience.	Yes, I think so. The model can be used to review the information/data collected and to give guidance for resolution actions.
23	**CA 23**						
24	**CA 24**	Rumours were heard … could be behavior as well. Financial impact … could be operational & external influence as well.	Agreed	Will a situation like Covid-19 become part or influence this model ….	Not in a emergency situation like we all are in currently (Covid-19) … I think this needs to be reflected in this model …. PANDEMIC	I think there is room for a situation/pandemic to be reflected in this model	After reflecting the above … YES
25	**CA 25**						
26	**CA 26**						
27	**CA 27**	I do agree with the outcomes under this point.	I do agree with the outcomes under this point.	I do agree with the outcomes under this point. However, I think adding a control agent will add value to the model.	Yes: if we can add a controlling agent, all over the workflow.	Yes, it is. We do have the influence of several acitvities on the unplanned emergency event, and this does put us in the repative learngin outcomes. The learning factor does improve our preparation for the following emergency event.	Yes: I think identifying the 71 activities are adding value to our ongoing experience to improve our action.
28	**CA 28**	Ineffective management seems more like a trigger. Maybe the mitigation should be additional training or replacement. Production problem also seems more like a trigger. In general, I did not see any resolution resulting in additional training to stakeholders. Triggers could be the result of stakeholders not having the correct knowledge or skills to perform a particular task.	For external influences there is no mitigation or recovery. For certain events emergency response plans can be developed to minimise the business impact.	It makes sense.	See my comments in point 2. I do not think the model will cover major emergencies.	Yes, from project management perspective (my domain) it will cover most emergencies.	The model can be used for structured problem identification and guide the user towards resolution. Especially for inexperienced project managers, it is not always easy to pinpoint why a project is not on track. By reviewing the model, the exact triggers can be identified and mitigated.
29	**CA 29**						

SECTION FOUR:
REFLECTIVE LOG EXTRACTS

INTRODUCTION

This final section outlines my research journey, highlighting my learning with extracts from my reflective log. This chapter is presented as a conversation with myself, to enable me to think about my learning. Unless otherwise stated, all quotations are taken from my reflective log.

During my first visit to WIT in September 2016, I was told that a reflective log was a requirement and that extracts had to be presented in my final thesis. First of all, I needed to understand what reflection was and how I could apply this to my research and use the findings to assist me through my doctorate journey. Throughout workshop 1 and discussions with my peers, the concept and application of reflection became clearer to me. However, one note stands out in my reflective log. On a night out with the DBA group during Workshop 1, there was a discussion over dinner identifying the requirements of the reflective log and the true meaning of reflection, when one of the team members stated: “The fact we are discussing reflection and identifying possibilities, means we are reflecting.”

As an operational implementation consultant, I found that reflection was not a common tool used. In the consultancy world plans are followed and where issues occur, their resolution tends to be reactionary. However, the journey through the DBA has outlined the power of reflection in all aspects of personal and working life. “Knowledge rests not upon the truth alone, but upon error also” (Jung 1931, p.54).

My DBA journey turned out to be a mass of mistakes and misjudgements in relation to my understanding of concepts and the choices made. Each realisation and understanding led to many discoveries and a sense of accomplishment. However, though my journey led to the discovery and realisation of the correct approach, I wasted a lot of time following the wrong path, and was required to refocus and follow a different path. I outline examples in this document, such as the difficulty in narrowing down my research question sufficiently and understanding the level of academic writing required for a level 10 paper. This document discusses my mistakes and how I reflected on the recovery from those mistakes.

My DBA Journey

My research journey started in December 2015, during a social occasion where a colleague suggested that we should both initiate a doctoral journey in the next academic year. I had completed my MBA in 2014 and had not considered further education. However, considering my circumstances at that time, in terms of both my working life and family life, I had the opportunity and time to embark on the DBA journey. As an accomplished change agent, I was very interested in pursuing a research topic on change management, as this was a core element of my professional work. The motivation for my ensuing research came from my own interest in operational change projects, of which I had personally managed and implemented many during my professional career. My initial research question led more towards customer experience, though from debates in the workshops, it become apparent that my topic was far too wide. During a lengthy discussion process with my supervisor, I narrowed down the topic sufficiently and it was accepted. I relished the challenge in researching my final question "What are the processes used by experienced change agents to mitigate the impact of an emergency unplanned event in a planned operational change project?"

Journey through the Workshop Series

Arriving in WIT on 26 September 2016 was an exciting but daunting occasion but meeting the 2016 DBA class was encouraging. Both the class and the DBA management team were welcoming, and a sense of comfort was apparent. However, the journey ahead was unclear and the timeline of four years was unsettling. Workshop 1 (Professional Skills Development) provided a good introduction to the DBA journey*:* "This journey looks clear and my unsettled feeling towards the DBA is now replaced with excitement and a willingness to achieve the required standard." As I approached workshop 2 (Business Theory Development and Application), I felt confident in my topic and my approach. Once I had completed my presentation during the workshop, I understood that my confidence was misplaced*:* "The topic is very broad and it requires refining," How to approach this comment from the lecturers, as this is the area I want to research. This comment presented a setback and it took some time for me to reflect and to develop alternative research topics that I wished to pursue. I found Workshop 3 (Research Design) very enlightening and developed a clear idea of the approach and methodology required for delivering the DBA thesis. Moreover, it enabled me to understand the complete journey to thesis submission and the details required. Analysing quantitative data analysis

is a normal activity for an operational consultant, but I felt bewildered by the prospect of approaching an interpretative study using qualitative data analysis. However, Workshop 4 (Data Analysis) gave me an insightful understanding of data analysis – in particular, qualitative data analysis. "Qualitative data analysis is not as difficult as expected and could be a good tool in my professional life."

The workshop series was insightful regarding the journey to achieving the DBA. Furthermore, I gained knowledge about operational management theories, three of which guided me towards my final research question and gave me the knowledge and passion to pursue this topic. First was John Kotter's (2007) eight approaches to organisational change, in which he discussed the failure of change projects. This gave me the curiosity to ask why they failed and how they recovered:

> A number of these corporations' change efforts have been very successful. A few have been utter failures. Most fall somewhere in between, with a distinct tilt towards the lower end of the scale (Kotter, 2007, p.31).

Second was Isabella's (1990) stages in change management, namely, anticipation, confirmation, culmination, and aftermath. The knowledge from this, combined with Kotter's (2007) eight approaches to organisational change gave me a deeper understanding of the change management process and a willingness to conduct further research in this area. Third was Maddalena's description of project management as:

> The process by which projects are defined, planned, monitored, controlled and delivered such that the agreed benefits are realised. Projects are unique, transient endeavours undertaken to achieve a desired outcome. Projects bring about change and project management is recognised as the most efficient way of managing such change (Maddalena, 2012, p. 84).

Being assigned a supervisor greatly aided my progress through the DBA. Communication with my supervisor enabled me to narrow down my topic sufficiently to progress to the preparation of Paper 1. "This topic is such a change from where I started, it does not involving the customer directly, however it is a very interesting topic and one I can leverage in the future."

Journey through the Paper Series

Starting on the doctoral colloquium gave me a sense of achievement, though I found my journey through Paper 1 particularly challenging in three distinct ways. The challenge

first was developing the research question. I started the DBA with a research question and in my naivety felt it was sufficiently narrow: "Develop a framework to deliver a successful innovative customer service." However, through the workshop series, and then in discussions with my supervisor, I eventually narrowed down my research question to: "Exploring the processes used by experienced change agents to mitigate the impact of an emergency unplanned event in a planned operational change project." This narrowing process involved many discussions, consultations with my peers, and Skype calls with my supervisor. My comments in my reflective log reflected my uncertainty: "How narrow is narrow? ... This is not the topic I started with … Am I going down a road I don't want to? ... I am happy with this question and the research will be very interesting."

The second challenge was developing a conceptual framework. As a consultant, I was familiar with process flowcharts. However, I was told several times*:* "Stop thinking like a consultant … the conceptual framework is not a process flow chart." I drafted a total of nine conceptual frameworks that were discussed, critically assessed and redrafted, until the final one was eventually agreed.

The third, challenge was developing the skills to write a level 10 paper. The receipt of a comment from my supervisor – "You should not submit a paper of this calibre to me" – was a major setback; and I logged this as a "frustrating, self-questioning, and self-doubting time". However, with support, I achieved the required level 10 writing skills and progressed through paper 1. In addition, I found the journey through paper 1, "self-doubting, educational, and self-developing".

Paper 2 was an easier progression. The development of Paper 1 and the conceptual framework allowed both me and my supervisor to develop a methodology to deliver the research question. Paper 2 documented this process. The verbal comments from the examiners, following my defence of Paper 2, included a few small suggestions but required no changes: "I wasn't expecting that." These comments from the examiners validated my belief that the DBA was achievable*:* "Work hard and just get it done."

Dr Sean Byrne give a very interesting lecture on research design in Workshop 3 and one key aspect that interested me was manual coding for a qualitative study. Furthermore, during my data analysis efforts, I enjoyed this aspect of manual coding in my qualitative study: "Getting into the detail will give greater insight to the findings." Moreover, it

allowed for swifter identification of the main themes and easier deciphering of the sub codes, thus enabling quicker analysis in NVivo and a much deeper understanding of the data.

On successful completion of Paper 3, the challenge of the data gathering became a reality for me: "24 interviews in 7 weeks, how am I going to get this done?" It required focus, organisation, and time to align the interviews with my list of identified participants. I communicated with these individuals and scheduled the interviews, after which the task felt less daunting. However, the schedule altered on many occasions, to facilitate the availability of the participants and to maintain an environment to enable them to relax and feel comfortable during the discussion.

The *DBA Programme Handbook* provided great guidance during all aspects of the DBA programme, but particularly the paper series. Before planning the layout of a paper, I would reflect on the notes in the *Handbook*, identifying the key requirements and developing a plan to deliver upon them. The *Handbook* had a permanent place on my desk and was frequently referenced throughout my four-year journey. I found, in times of uncertainty, that it was a "go-to" tool to relieve doubts, give guidance, and review and refresh my mind as I progressed.

On reviewing my reflective logs, I found that on numerous occasions I referred to the support of my supervisor and the WIT DBA team: "On review of the paper requirements in the *Handbook* I am sure of the content, however, I'm not sure of the word count … Delighted with the feedback from Tom; the content and work count are aligned." "The *Handbook* is good, however previous theses to review would be of great support." On communicating this possibility to the DBA team, I received an online link to the library, where past thesis were available.

Learning and Personal Development

This was a steep learning curve that required a lot of personal effort and hard work. While the taught elements of the DBA guided me through the path of the course, the "learning by doing" element was of great benefit to me. Additionally, I learned from the journey of others in the group, from the various workshop lecturers, from the internal and external examiners, and from the DBA coordinators and management team. The examiner

feedback played a key part to the finetuning of each paper. Moreover, during the discussion period in the paper presentations, the examiners gave very helpful suggestions on the approach to delivering the papers. One comment guided me in my data gathering approach: "Use a few stories from the change agents during the interviews for greater data collection."

The DBA journey did generate significant personal and professional learning and development for me. Some of the challenges that I faced helped me to develop my research and professional skills, as well as my academic writing. I am now more aware of: 1) the requirements for a paper/presentation preparation, including the need for accurate and consistent referencing, editing and punctuation; 2) staying focused on the topic in hand and the need to keep reviewing the requirements; 3) trying to incorporate everything into one document, planning the paper through the table of contents and word count, while also remaining conscious of the topic under discussion; and 4) the presumption of the complexity of the DBA and the realisation of the effort and time required to complete. I have found the power of research and have successfully incorporated this into my professional practice, using this approach for myself and encouraging it among my colleagues. In addition, the research has given a greater understanding and knowledge of tasks been assigned.

The DBA journey has taught me that research goes beyond information seeking: it is about interpreting this information for the purpose of developing new knowledge. For my topic, the DBA process was about selecting existing academic knowledge, applying it to a current problem, and creating a solution – hence producing new knowledge. Participating in the DBA has expanded my knowledge and has given me an eagerness to continue to develop it. The knowledge I developed on my chosen topic is, I hope, now worthy of a doctorate. In gaining this knowledge, I developed data through interviewing and through qualitative analytical skills to identify key points in the database. Applying this knowledge to the research problem involved me in applying advanced problem-solving skills in a way I had not previously used. This effort was a constant cycle of refining and developing a solution, reviewing the solution, engaging in peer review of the solution, and further refining it. The application of this knowledge to the research problem involved me in being innovative and taking a risk on the outcome. To support this risk, I had to use my research skills to extract the relevant information from the data generated to create an argument that justified my proposed research questions. It was a constant

process of refinement to arrive at the research objectives to answer my research questions and to justify my thesis proposal. This experience was a lesson in logical deduction mediated by the ever-present need for the outcome to be applicable in practice.

The key enablers I adopted to complete the DBA process were self-management and project management skills. To achieve the required deadlines, I learned to apply myself to the research for long periods of time, to become completely immersed and to progress the development of the research. Given my work and life circumstances during the DBA process, I had the ability to remove myself from external distractions and completely focus on the task in hand. The DBA process was indeed a four-year project, with many milestones throughout. These milestones and deadlines rendered the DBA like a work project, and I treated it as such. My ability to manage my time, scheduling my DBA time around my working timing and ensuring a work-life balance was put to the test on several occasions, when I was faced with the challenge of meeting deadlines. From a personal perspective, a key motivational factor was my family in particular my daughters, as both are in secondary school: I wanted to set the example that once you commit to a course, you gain the benefits from the course and complete the tasks required. To achieve the required tasks during the DBA, I developed some self-motivational strategies in the form of guidelines, rewards and recognition (see, Table 1). The summary of self-motivational strategies highlights nine strategies I used to get through the process and the relevant actions I took to achieve this.

Table 1: Summary of Self-motivational Strategies Used during the DBA Process

Goal Setting	Submission of assignment and papers by predefined dates. Setting a predefined written word count per day.
Observations on Study Process	Understanding that a plan for an approach is required before starting to write. Prioritise DBA time and keep to the schedule.
Planning to Succeed	Follow the plan and where I fall behind have a backup approach to recover. Maintain a constant list of tasks to be completed.
Building a Working Environment	Home office with comfortable environment. Access to internet and printers.

Peer Support	Develop a peer support group for DBA discussions.
Rewards for progress	Work hard during the week then take a day's rest. On completion of a phase, enjoy a break with my family.
Correction Process	Reflection on feedback, actions and activities which did not turn out as planned. Discussions with peer group.
Understanding the Journeys End	Focus on each workshop and paper submission deadline. Recognise the achievements of each phase completed. Understand the next step to be completed.
Final Reward Visualisation	Visualisation of my acceptance of my Doctorate Award.

During the course of the DBA, I have further enhanced my skills the following areas: 1) conducting a major research project from concept, developing a methodology to deliver, performing the research, analysing the data gathered, preparing and discussing the findings at doctorate level; 2) applying academic knowledge to an industrial practice problem; 3) writing effectively for a business purpose and developing sound arguments; 4) working with and taking advice from more experienced experts; and 5) managing myself and the project to achieve the required milestones.

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