Situational Incompetence: an investigation into the causes of failure of a large-scale IT project

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DECLARATION

I certify that except where due acknowledgement has been made, the work is that of the author alone; the work has not been submitted previously, in whole or in part, to qualify for any other academic award; the content of the thesis is the result of work which has been carried out since the official commencement date of the approved research program; any editorial work, paid or unpaid, carried out by a third party is acknowledged; and, ethics procedures and guidelines have been followed.

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# Table of Contents

Table of Figures .......................................................................................................................... vii
Publications ................................................................................................................................. viii
Abstract......................................................................................................................................... ix

Chapter One - Introduction........................................................................................................... 1
  1.1 Why IT Project Management? ................................................................................................. 1
  1.2 Problem Background .............................................................................................................. 2
  1.3 Research Aims ...................................................................................................................... 4
  1.4 The Project Management Domain ......................................................................................... 5
  1.5 Case Study Selection ............................................................................................................ 8
  1.6 Research Approach and Outcomes ....................................................................................... 10
  1.7 Research Objective ............................................................................................................ 11
  1.8 Significance of the Research ................................................................................................. 12
  1.9 Structure of the Thesis ......................................................................................................... 12

Chapter Two – Literature Review ............................................................................................... 17
  2.1 Scale and Magnitude of the IT Project Delivery Problem .................................................... 17
  2.2 Measuring Project Success .................................................................................................. 20
  2.3 Factor Analysis ................................................................................................................... 25
  2.4 The Complexity of an IT Solution ....................................................................................... 29
  2.5 Project Reporting ................................................................................................................ 31
  2.6 Normalisation of Project Failure ......................................................................................... 32
  2.7 Expert Leadership in IT Projects ......................................................................................... 41
  2.8 Experts Require Deliberate Practice ................................................................................... 44
  2.9 The Peter Principle ............................................................................................................ 45
  2.10 Summary ........................................................................................................................... 46

Chapter Three - Research Methodology .................................................................................... 51
  3.1 Introduction ......................................................................................................................... 51
  3.2 Research Approach .............................................................................................................. 54
  3.3 Inductive Case Study Methods ........................................................................................... 56
  3.4 What, When, How and Why ............................................................................................... 59
  3.5 Primary Data Collection ..................................................................................................... 60
    STEP 1: ................................................................................................................................. 65
    STEP 3: ................................................................................................................................. 66
    STEP 4: ................................................................................................................................. 69
    STEP 5: ................................................................................................................................. 70
  3.6 Issues of Reliability and Validity ........................................................................................ 70
  3.7 Summary ........................................................................................................................... 73

Chapter Four - The Case Study ................................................................................................... 75
  4.1 Background to the QH Payroll Project ................................................................................ 75
  4.2 The Players in the project .................................................................................................... 79
  4.3 Timeline of Events ............................................................................................................. 85
4.4 Chaos in the Queensland Government .............................................. 89
4.5 Themes to Emerge from the Data .................................................... 94
4.5.1 A Lack of Apparent Domain Expertise ......................................... 96
4.5.2 Parties in Conflict Throughout the Project .................................... 102
4.5.3 Accountability of the Parties ....................................................... 106
4.6 Summary and Conclusions ............................................................. 111

Chapter Five - The Contributory Factors of Project Failure ...................... 116
5.1 Lacking Domain Expertise ............................................................ 117
5.2 The Need for Competence ............................................................ 130
5.3 Stakeholder Conflict ................................................................. 134
5.4 Lack of Accountability ............................................................... 139
5.5 Summary and Conclusion ............................................................ 144

Chapter Six - A Theory Emerges .......................................................... 146
6.1 Testing Situational Competence ..................................................... 148
6.2 Validity and Reliability ............................................................... 156
6.3 Conclusion .................................................................................. 156
6.4 Implications and Future Work ....................................................... 158
6.5 Limitations of Future Research ....................................................... 161

Appendices ....................................................................................... 163
Appendix One: Witness Statements ....................................................... 163
Appendix Two: Project Documents ....................................................... 178
Appendix Three: Social Media Essays .................................................. 179
The Numbers are in - 2:51:47 ............................................................. 179
Way to accept responsibility there IBM! ............................................. 181
A 12 Step Program for IT Leadership .................................................. 183
Understanding Cobb’s Paradox: a deep dive into the causes of a billion dollar IT project failure .......................................................... 185
Can The Government Be Trusted With IT Decisions and Projects? ....... 186
Census - you reap what you sow! ......................................................... 190
Moneyball for I.T. ............................................................................. 192
Appendix Four: Key Words ................................................................. 197

Bibliography ...................................................................................... 199
system.exit (0) .............................................................................. 210
<table>
<thead>
<tr>
<th>Figure No.</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Standish Group 2014 &amp; 2017</td>
<td>7</td>
</tr>
<tr>
<td>2</td>
<td>adapted from Kerzner 2017</td>
<td>20</td>
</tr>
<tr>
<td>5</td>
<td>A Risk Categorization Framework (Keil, Cule et al, 1998)</td>
<td>36</td>
</tr>
<tr>
<td>6</td>
<td>data collection process</td>
<td>55</td>
</tr>
<tr>
<td>7</td>
<td>Research Process</td>
<td>57</td>
</tr>
<tr>
<td>8</td>
<td>Stanford Topic Modelling network relationship diagram</td>
<td>60</td>
</tr>
<tr>
<td>9</td>
<td>Network Diagram themes mapped to topics</td>
<td>61</td>
</tr>
<tr>
<td>10</td>
<td>Project Timeline</td>
<td>75</td>
</tr>
<tr>
<td>11</td>
<td>Annexure 6, program of work</td>
<td>79</td>
</tr>
<tr>
<td>12</td>
<td>data collection</td>
<td>82</td>
</tr>
<tr>
<td>13</td>
<td>The Governance Boards of the Payroll Project</td>
<td>87</td>
</tr>
<tr>
<td>14</td>
<td>The hermeneutic circle</td>
<td>105</td>
</tr>
<tr>
<td>15</td>
<td>Enhanced Goffman Dramaturgy Model</td>
<td>108</td>
</tr>
<tr>
<td>16</td>
<td>developing better measures</td>
<td>136</td>
</tr>
<tr>
<td>17</td>
<td>measurement instrument</td>
<td>137</td>
</tr>
</tbody>
</table>
Publications


Abstract

Information technology (IT) projects in the government (public) sector experience significant challenges. Despite decades of research, the adoption of formal methods, the use of external suppliers and packaged software, these remediation attempts have not appeared to have reduced nor mitigated the problems faced when the public sector undertakes large IT projects. Previous studies have examined the causes of IT project failure, in particular these have focused on factor analysis. A relatively limited number of studies have investigated the contribution of IT competence, and even fewer have considered the role and contribution of non-IT executives in IT project outcomes. This study sought a deeper understanding of what drives the behaviour of large scale IT projects. Of particular note was the finding that ‘the skills required to do the job are the same skills needed to identify competence in others’ (Kruger and Dunning 2009). It was this finding which was found to most influence the observed behaviours of executive leadership leading to IT project failure.

This research reports on a qualitative study that investigated 181 interviews and 5,000 pages of project data drawn from a large-scale public sector IT project which resulted in a cost overrun that exceeded AUD$1 Billion. The interview transcripts and project data were analysed using an inductive case study methodology and the research process was influenced by aspects of Grounded Theory.

A new Theory of Situational Incompetence has been developed as a result of the analysis. The research culminates in a proposed measurement instrument intended to gauge leadership competence in the context of increasing project size and complexity.

**KEYWORDS:** IT project failure, public sector waste, failed projects, governance, project management, critical success factors, situational incompetence
Chapter One - Introduction

‘There are many ways to make large software systems fail. There are only a few ways of making them succeed’

Capers Jones (2004)

This chapter initially presents the motivations for this study. Namely, why IT Project Management of very large projects in the public sector is an important topic for research and why the competence perspective of non-IT management is crucial to gaining a deeper understanding of the influences on project outcomes. Then the research question being answered by this study is described. A brief outline of the research approach taken in the study is presented and finally, the structure of this thesis is outlined.

1.1 Why IT Project Management?

The primary question of this research is why? Why, despite all of the experience, the research, and the training that is available, the consultants and software companies focusing attention on IT projects and the billions upon billions of dollars spent, IT projects continue to fail at a rate that appears little changed over the decades? Evidence will be presented to demonstrate the enormous impact that failed IT systems have on business, government and the community. Evidence will be presented as to what previous research has offered to explain IT project failure. Theories will be put forward to explain the observed phenomenon in the case studied which forms the foundation of this research. A theory will be expounded to address the question of how and why IT projects continue to fail despite all the efforts that have been expended for more than fifty years. Finally, an instrument will be proposed to measure the competence of individuals engaged in project governance, oversight and management contrasted with the complexity of the project being undertaken.
1.2 Problem Background

The government of the United Kingdom initiated a project management improvement research collaboration with several universities. Tony Meggs, leading this effort, stated that ‘projects and programmes are the means by which government policies are made real; their successful implementation is vital to our economic wellbeing’ (Meggs 2016). Projects and their cost effective performance are critical to bureaucracies, and to private organisations, and their implementation has been widely studied.


Research has proposed a host of different reasons to explain project failure (Prater, Kirytopoulis et al. 2017, Ewusi-Mensah 1997, Baccarini, Salm et al. 2004), Al-Neimat 2005, Al-Ahmad, Al-Fagih et al. 2009). Recent research by the Standish Group has found that for ‘development projects that exceed $100 million in labor costs, only 2% are successful, meaning on-time and within budget. Another 51% are considered challenged or over budget, behind schedule or didn’t meet user expectations. The rest, 47%, are seen as outright failures’ (Thibodeau 2017).

One of the reasons for explaining this high rate of failure, is that it has been assumed that IT project failure is due to shortcomings in generic project
management capability, rather than due to attributes of IT projects in particular. For example, according to Hidding and Nicholas (2017,p.81), ‘most of the improvement efforts have focused on advancing variations of the traditional project management paradigm, such as (that which) is embodied by the Project Management Body of Knowledge’.

Two questions arise regarding IT project failure research. First, why is the success rate of IT projects so poor? And secondly, why, despite the efforts of decades of research and industry practice, the situation fails to improve? The problem is known as ‘Cobb’s Paradox’ (Bourne 2011). Cobb’s Paradox states: ‘We know why projects fail; we know how to prevent their failure—so why do they still fail?’. Cobb (cited in Bourne, 2011) made the observation in 1995 while attending a presentation by the Standish Group (authors of the Chaos series of reports) while working at the Secretariat of the Treasury Board of Canada. Cobb’s observation that “we know why projects fail“ should not be taken in a literal, completely black and white sense, rather it should be considered to be a reference to the collective body of expert commentary, opinion, research and project practitioners that have offered solutions. Despite the successful implementation of major IT projects, repeatable success continues to be elusive (Thibodeau 2017).

Cobb was not alone in observing that there is a great deal studied and written about project failure, and that consulting firms and government agencies have proposed methodologies and remedies, but little actual progress appears to have been made with respect to the delivery of projects that meet expectations or budget performance. The International Federation for Information Processing (IFIP) Working Party 8.6 ran a conference to address this specific issue asking ‘why our scholarship has not been more effective. Is the fault one of theory and inadequate understanding? Or is the problem one of knowledge transfer, the failure to embed
research knowledge in the working practices of managers and policy-makers’ (Dwivedi, Wastell et al. 2015).

This study sets out to understand why large-scale IT projects in the public sector continue to fail. The vehicle used to shed light on ‘Cobb’s Paradox’ is a very large and complex project in the public sector.

1.3 Research Aims

The aim of this study was to explore, in depth, the behaviours of project leaders engaged in a very large project that was not successful. It sought to do this by examining the interview transcripts of all those involved, and by re-constructing project documents in an effort to understand what was known by whom, and when did they know. The study sought to answer the following research question:

*Why do IT projects continue to fail despite what is known about how to make IT projects successful?*

IT project failure is thought to be a very complex issue, one that may be highly contingent upon specific and very localised circumstances. While previous research has identified high-level issues such as a lack of senior management involvement (Fortune and White 2006) or a lack of clearly identified deliverables (Bannerman 2008), these factors identify what went wrong, but don’t address the underlying question of why they occur time and time again. Given that these factors have been studied and understood for a very long time, this research is taking a slightly different perspective to ask the question of *why* these factors are still causing projects to fail. In order to uncover explanations of IT project failure, that might lead to a causal understanding, this research examines a project that is widely regarded to have failed, and one for which a great deal of data has been preserved. The explanations for project failure are intended to go beyond high-
level generalisations and to critically examine more detailed explanations, which have potential to offer guidance for future project improvements.

If explanations of the project’s failure are found to be something which has not been previously identified in the literature, then this research will contribute new findings to inform the conduct of IT project quality management. On the other hand, if it is found that the identified explanations were previously understood and known, then this research will confirm those issues and contribute to improved project quality governance knowledge.

Should it transpire that the contributory factors for IT Project failure are well understood, widely published and known then there is an issue to be examined as to why industry has not benefited from this research, or why industry generally may be regarded as having ignored the research findings when it comes to the practice of IT project management.

For the purposes of consistency this research has adopted the widely understood term for project failure as being projects that fail to be delivered on time, on budget with required functionality.

1.4 The Project Management Domain

(Lucas 1981.p14) characterises an IT project as a ‘process which includes the entire development of the system from the original suggestion through to the feasibility study, systems analysis and design, programming, training, conversion, and installation of the system’. Research into the area of systems implementation has provided the majority of early studies and typically fell into two categories: process models, such as the systems development lifecycle (SDLC); and factor studies (Newman and Robey 1992).
The fact that IT Projects perform poorly is widely accepted by many commentators, with an extensive body of research quoting and investigating failure rates that would be unacceptable in any other engineering discipline (Baccarini, Salm et al. 2004, Al-Neimat 2005, Al-Ahmad, Al-Fagih et al. 2009).

Software projects are considered to be at high-risk of failure through not delivering what was intended or at greatly increased cost than intended (Bannerman 2008, Charette 2005). Furthermore, these challenges have not been remediated by the adoption of pre-packaged solutions and products (Barki, Rivard et al. 2001), approaches that were intended to reduce IT software development and implementation risks.

Capers Jones analysed 250 projects and identified that ‘25 were deemed successful in that they achieved their schedule, cost and quality objectives. About 50 had delays or over-runs below 35 percent, while about 175 experienced major delays and over-runs, or were terminated without completion’ (Jones 2004 p.5).

Charette stated: ‘the problem only gets worse as IT grows ubiquitous’ (Charette 2005 p.1). Continuing this assertion, Charette states ‘organizations and governments will spend an estimated $1 trillion on IT hardware, software, and services worldwide. Of the IT projects that are initiated, from 5 to 15 percent will be abandoned before or shortly after delivery as hopelessly inadequate. Many others will arrive late and over budget or require massive reworking. Few IT projects, in other words, truly succeed’.

The consequences of failure extend beyond the cost of the IT Project. For example, directly attributed to the failure of a major IT Project, the FoxMeyer pharmaceutical company, located in Texas USA, went from being a USD$5 billion successful company to announcing bankruptcy (Charette 2005).
The Chaos Reports (1994-2017) by the Standish Group reported in 1994 that ‘a staggering 31.1% of projects will be cancelled before they ever get completed. Further results indicate 52.7% of projects will cost 189% of their original estimates’. In their twenty-first anniversary edition of the Chaos reports, Standish Group noted that ‘in 2013, the number of projects that were on time, on budget, and on target had improved to 36% (from 31% in 1994). On the other hand, 21 years ago the failure rate was 16%. In 2013, the failure rate is also 16%’. These problems have led others to characterise the software industry as being in a state of crisis (Ewusi-Mensah 1997).

The Standish data quoted above is aggregated across all project sizes and provides a potentially misleading impression as to the success of very large and very complex projects. Below (figure 1) is more recent data which breaks out projects according to size.

![Project Performance Data, from Standish Group 2014 & 2017](image)

It has been determined (Emam and Gunes-Koru 2008 p.89) that ‘between 16 and 22 percent of delivered projects were considered unsuccessful on the basis
of their performance’. This refers to those projects that were not cancelled in-flight, but were instead judged performing acceptably well enough during the project phase to be allowed to complete. Later research (eg:Thibodeau 2017) shows that those concerns remain relevant.

An industry report produced by (Meiritz 2012) suggests a high failure rate within large projects. In recent years there have been many large scale IT project failures reported within the public sectors of Australia, the United Kingdom, and the United States of America amounting to billions of dollars (Bacon and Hope 2013). The contributory factors of these project failures have been reported and studied for decades. The major findings include poor project planning, a weak business case, and a lack of top management involvement and support (Whittaker 1999). Despite gathering data, studying these projects, and reporting on the causes of these project failures, the scope, size and frequency of project failures would seem to be increasing, becoming more frequent, and having greater impact on the achievement of intended outcomes (Johnson 2010).

1.5 Case Study Selection

In order to undertake a post-mortem examination of a failed project, the researcher needs access to a wide range of project artefacts. Furthermore, the documentation required to complete an effective post-mortem investigation needs to be comprehensive. Access of this nature, and to the detail and specificity required would be virtually impossible to obtain from a failed private-sector project where knowledge of that project’s failure is closely guarded and restricted by commercial confidentiality. The researcher is therefore directed towards projects in the public sector. Because of the accountability and transparency required of government projects, public sector organisations maintain formal documentation, and the data can be potentially accessed under freedom-of-information requests.
Both the Victorian State Government and the Queensland State Government (Australia) have, over recent years, completed performance audits of IT Projects and published extensive audit reports. The Queensland Government went further than the Victorian Government in launching a Commission of Inquiry into their biggest failure, the Queensland Health Payroll Project (QHPP).

The Commission of Inquiry report (Chesterman 2013) stated that ‘the replacement of the QH payroll system must take a place in the front rank of failures in public administration in this country. It may be the worst.’

The extent of the Commission, and its ability to lawfully compel the provision of evidence, has created a rich pool of data to undertake an effective examination of the life of the Queensland Health Project, and to examine events as they unfolded over many years. The extent of the material available from a Commission is much greater than what would be available in other public sector reports, such as Auditor General reports and so on. In this way, the QH Payroll Project failure is somewhat unique in the amount of material available for an independent researcher to examine and investigate.

The Commission has published into the public domain an exhaustive list of transcripts and witness statements. In addition to these, the researcher has also procured, through the use of freedom-of-information requests, all available project documents including project plans, emails, steering committee reports, and other project artefacts that were not part of the published Commission of Inquiry data set. This archival material forms the primary data resource of this research project.

This research then is drawing from a single, albeit very large, unusually rich, documented case study, in order to produce context dependent insights drawn from actual experience that would be otherwise unattainable.
1.6 Research Approach and Outcomes

This research adopts a case based approach to understanding IT project failure that has occurred in a ‘sticky, practice-based problem’ (Benbasat, Goldstein et al. 1987 p.369). Therefore, the research follows an approach that contributes to ‘theory building’ (formative) rather than ‘theory testing’ (confirmatory) (Eisenhardt and Graebner 2007).

‘Building theory from case studies is a research strategy that involves using one or more cases to create theoretical constructs, propositions and/or midrange theory from case-based, empirical evidence’ (Eisenhardt and Graebner 2007 p25).

The process of ‘theory building’ is undertaken by examining a case in detail, by starting with little or no preconceived notion of the theory which will ultimately emerge from the data (Eisenhardt 1989 p.534). ‘Induction is viewed as the key process, with the researcher moving from the data to empirical generalisation and on to theory’ (Heath and Cowley 2004 p.144). (Eisenhardt and Graebner 2007) refer to this method as ‘Inductive Case Oriented Research’.

Both inductive case-oriented research and grounded theory form part of the body of knowledge relating to qualitative data analysis (QDA), and both have as their objective the development of a theory to explain an observed phenomenon.

For this researcher the observed phenomenon for which explanations are sought is the ongoing and continual failure of information technology projects to deliver on time, to an agreed budget, and to meet the value and quality objectives of the enterprises that they are meant to serve.

Combining aspects of Multi-Grounded Theory (Goldkuhl and Cronholm 2003) this research has adopted inductive case study as an effective approach to
collecting and analysing the data from the project being studied, and to simultaneously explore literature on the subject as theories emerge from the data. In particular the approach to this research has followed a process of ‘empirical grounding, theoretical grounding, and internal grounding’ (Goldkuhl and Cronholm 2003 p.2). The effort of this researcher has been to ground the findings in observations of the data (empirical), and to validate these against theories as the data emerges, in a constant and repetitive (recursive) fashion until saturation occurs.

In a typical inductive case-study research project the literature review will emerge in stages as hypotheses are identified and explored. ‘Induction moves from the particular to the general: it develops new theories or hypotheses from many observations. This means that grounded theory studies tend to take a very open approach to the process being studied’ (Sbaraini, Carter et al. 2011).

In practice, the steps in an inductive methodology are recursive, not linear or rigidly sequential. Data collection proceeds to coding and analysis which leads back, in recursive fashion, to more data collection and additional literature review. The literature review in particular is ongoing and is motivated primarily by the findings, which emerge from the data collection and coding in a recursive manner.

1.7 Research Objective

The purpose of this study is to go beyond identifying the proximal causes of failure, and to examine why project failure continues after more than fifty years of research and education. The objective of this study is to understand why project cost over-runs and project failures continue, and to suggest methods to avoid repeating these same failures on other projects, elucidating actionable explanations for the failures from the findings of this research.
1.8 Significance of the Research

Through this case study, this research is intended to produce a better understanding of the reasons for the failure of large-scale IT projects. The research aims to inform understanding of what caused this particular project to fail and propose remedial action that may have been applied to ensure that the project was a success, and which have potential application to improve the management of other large IT projects. It is anticipated that the framework developed as a result of this research (Chapter 6) is, theoretically, generalisable to a much broader audience, and potentially contribute to improvement in a whole range of different types of projects.

For the practical project implementation, the research findings and model developed could potentially lead to greater awareness of quality management and governance challenges imposed by large IT projects. For example, potential benefits include; a change in hiring practices, changes to governance arrangements and changes to contractual arrangements with external service providers.

The research may lead to an additional research methodology into previously little understood aspects of project management and governance of very large (grand and mega) projects, beyond the realm of information technology, but more broadly extended to other technical and demanding domains.

1.9 Structure of the Thesis

This document contains six chapters in total. A summary of each chapter is provided in the following.
Chapter One

Chapter One sets out the rationale for undertaking this research and why resolving this problem may be important to the field of information systems project management.

The concept of Cobb’s Paradox is introduced which asks the question “if we know so much about how to manage IT projects why do they keep failing?” (Bourne 2011). This question was the impetus for this research, in a context where the continued and apparently increasing rates of IT project failure are of concern and no mitigation appears to be successful.

The cost of IT project failure is introduced, and the current domain is outlined in brief. the reasons for the selection of Queensland Health Payroll project as a case study are explained.

The rationale for methodological approach to the research is described, and is demonstrated to be based upon grounded theory and utilises an inductive case study approach to elicit information which is then explored in more depth. This “recursive” approach seeks to elicit themes that emerge from both the data and the literature, that have potential utility for IT project management quality improvement and to constantly revisit both the data and the literature as themes and concepts emerge from the research.

Chapter Two

Chapter Two describes the scale and magnitude of the information technology project failure problem and the nature of the literature’s commentary on this problem.

The data and costs presented in this section enumerate only the direct project costs and losses. The opportunity cost, impact or loss of benefit has not been calculated. That the costs of IT project failure are so enormous indicates the
importance of making progress on identifying contributory factors that are actionable and may lead to some improvement.

The projects which are identified in Chapter Two come from both the Public and Private sectors and represent projects from all over the world. The list of projects described are not intended to be complete as they are intended to illustrate that IT project failure is a global problem, and that the costs and stakes are substantial.

**Chapter Three**

In this Chapter the research methodology is described. This comprises an iterative process of identifying themes from the case study data, exploring those themes in the literature and extrapolating how the themes are articulated, with a view to having feasible and practical utility for IT quality management implementation in the future.

Achievement of this goal would provide a foundation to build a new theory or set of explanations as to what might contribute to IT project failure, and identify that these causes have not previously been articulated or adequately researched.

**Chapter Four**

Chapter Four examines a particular project, the Queensland Health Payroll Project. This project was selected as the case study after examining other possible projects. The other primary candidate for investigation was the Victorian Government’s myki transport ticketing system. Initially both projects were pursued as “Freedom of Information Requests” in order to uncover sufficient data to inform the research.

The Victorian Government was very reluctant to release information while the Queensland Government was forthcoming and cooperative. In the end the availability of data made the decision about which case study would be pursued.
The Queensland Health Project was a rich source of data, comprising:

- 122 witness statements totalling 3,850 pages
- 350 project related files totalling more than 5,000 pages

**Chapter Five**

This Chapter analyses both the project data and themes from the literature. From this analysis, a number of themes emerged as being the “likely indicators” of project failure for which further and more detailed investigation was warranted.

As themes emerged these were examined and compared and contrasted with the literature in an effort to understand if there were any theoretical underpinnings that might “shed some light” on why these factors were prevalent in the project. Several theories were identified which provided clarity as to what was occurring on the project and potentially why. These theories provided greater insight into the behaviours occurring on the project and contributed to the emergence of a new theory to explain why the Queensland Health Payroll project experienced such difficulties, despite their executives and project leadership being made aware of the risks and challenges that it was facing.

**Chapter Six**

Chapter Six discusses the emergent theme of leadership on competence and expertise in IT project management and its impact on project outcomes.

A theory of project failure named as “Situational Incompetence” emerged from the data and is offered in this chapter to explain the findings.

Situational Incompetence applies when an otherwise experienced executive is placed in a position of authority or accountability for which they lack
experience, training or specific skills. This finding has implication for how leaders are selected for complex tasks requiring specialist IT domain knowledge and technical competence. Potential approaches to remediation and future research are discussed.

Chapter Six concludes with a proposed measurement instrument for examining Leadership Competence versus Project Complexity and Size, i.e., measuring competence in the context of the situation being managed.
Chapter Two – Literature Review

This chapter undertakes a review of the literature into IT project failure which stretches over nearly fifty years. This historical perspective helps to put into context that the factors which are observed and classified as being the causes of project failure have been evident across almost every type and size of project and have been consistently evident for an extended period of time. The review considers the literature that informs this research with respect to the scale and magnitude of the IT Project delivery problem, and the prior research which sets out to describe the factors which have caused IT projects to fail.

The fundamental argument being put forward by this researcher is that the factor analysis that has informed the majority of prior research has focused on the symptoms of IT project failure and not the causes. Further, it is argued that if prior research had identified the factors which caused IT project failure, then we would have seen a demonstrable and measurable improvement in IT project performance over an extended period. The data suggest that with the exception of projects that cost less than USD$1 million in productive labour, or consume less than 10,000 hours of productive labour, the performance of projects has either not improved or has worsened. This is especially true for very large-scale projects in the public sector. Research being undertaken at the Said Business School of the University of Oxford suggest that ‘pilot studies indicate that performance in major ICT programmes is even more problematic than in other types of major programmes, resulting in waste of taxpayers’ and shareholders’ money for public and private projects, respectively’ (Budzier and Flyvbjerg 2018).

2.1 Scale and Magnitude of the IT Project Delivery Problem

While there is a significant body of literature about IT project failure, the scale and impact of IT Project failure appears to show that the industry is not
benefiting from that research, and that the failure rates may be getting worse (Johnson 1994 to 2015). The failure of the industry to improve the performance of IT projects is a problem of potentially increasing significance, particularly as the world becomes more dependent on digitalisation.

To put this problem into context, public sector spending on information technology is approximately 9.1 percent of total operational expense (Gartner 2013) making investments in information technology one of the single largest items of government expenditure. Seventy-one percent of that expenditure is estimated to be on operating activities, and twenty-nine percent on new initiatives and new programs (Gartner 2013), but the success of these new initiatives has been limited with ‘a number of high profile cost and time blow-outs in ICT’ (Victorian Government Ombudsman 2011, p.38). The Ombudsman’s report points out that the costs involved in the failures of public sector IT projects can be significant, as can be seen with highly criticised projects such as MyKi (AUD$1.5 billion), the abandoned HealthSmart project (AUD$600 million), and Link and RandL projects where projected spend was doubled.

A report by the UK Government National Audit Office (nao.org.uk 2011 p.4) has identified that the whole-of-life cost of projects underway amounts to 511 billion British pounds (GBP), with thirty-four percent of those projects assessed as “in doubt or unachievable” amounting to active projects at risk of some GBP173 billion (AUD$315 Billion).

To illustrate the prevalence of IT project failure rates, the Standish Group (Johnson 2010) put the declining success rate at just 6 percent of all projects undertaken in 2010, having previously been recorded at 14 percent in 1995. There is contention about whether the Standish data is completely accurate, and some have argued that the lack of transparency in the Standish Group collection and analysis process makes the data unreliable (Eveleens and Verhoef 2010, Emam and
Gunes-Koru 2008, Glass 2005, Glass 2006, Jorgensen and Molokken 2006, Sauer, Gemino et al. 2007), however the Standish reports have been heavily relied upon for a wide range of academic papers. Furthermore, comparing the Standish data over the period 1994 to 2015 at a minimum provides a measure of internal consistency and can be seen as reliably demonstrating a trend, even if different researchers hold alternative views about the actual data points.


The International Federation for Information Processing (IFIP) working group 8.6 noted, in their editorial (Dwivedi, Wastell et al. 2015 p.1) that ‘despite decades of research and the accumulation of a substantial knowledge-base within MIS, further progress is required to improve the conduct of information systems initiatives. Faced with this, it is pertinent to ask why our scholarship has not been more effective. Is the fault one of theory and inadequate understanding? Or is the problem one of knowledge transfer, the failure to embed research knowledge in the working practices of managers and policy-makers’.
That projects continue to fail without signs of improvement, it can be speculated that either the reasons for project failures remain unknown, or that project teams don’t effectively take account of the advice that exists about what it takes for a project to be successful. It is also possible, that project executives choose to ignore the advice that they are given preferring to act on their own instincts. Irrespective, the problem of IT project success and failure, including its potential contributory factors and remedies, is a significant problem worthy of study. Given the ubiquitous nature of information technology into many facets of life and society, understanding why IT projects are so unsuccessful is of considerable importance.

The scale and scope of information technology project failure is massive. It occurs in every country, and every discipline. Government agencies and businesses that a casual observer might assume to be efficient and well managed display incredible ineptitude when it comes to IT projects.

2.2 Measuring Project Success

In this chapter we will undertake a brief review of various approaches which have been suggested for measuring and tracking project success. We will conclude this chapter by defining how project success was measured for the purposes of this research.

The literature on failed information technology projects is vast and stretches back over almost fifty years. ‘The History of Project Management’, (Kozak-Holland 2011) traces the same project management disciplines back to the time of the construction of the Great Pyramids of Giza and the Great Wall of China. In construction of the Great Wall of China the stages of planning, executing, controlling and monitoring, and closing as being evidenced (Kozak-Holland 2011 p.81). When reviewing the construction of the Great Pyramids, the archeological
evidence suggest the creation of an advanced sundial which divided time into 12 roughly equal segments during daylight hours and is evidence that ‘scheduling was done using the day as the basic unit of measure’ (Kozak-Holland 2011 p.66).

Project management has been part and parcel of economic activity for the entirety of human existence, and yet we still struggle with the basics and IT projects at least continue to demonstrate very poor success rates.

![Figure 2: adapted from Kerzner 2017](image)

A generic project management construct has been provided by Kerzner (Kerzner 2013 p.19) and sets out the basic steps that any project would follow, as outlined in Figure 2.

Much of the existing research into IT project failure appears to have assumed that failure is due to shortcomings in generic project management
capability, and consequently ‘most of the improvement efforts have focused on advancing variations of the traditional project management paradigm, such as (that which) is embodied by the Project Management Body of Knowledge’ (Hidding and Nicholas 2017, p.81)

Figure 2 identifies the broad steps of “inputs - processes - outputs”. In this model the project management processes are limited to a focus on the activities associated with a very narrow definition of project execution. This potentially constrains the scope of any research away from those activities which are characterised as inputs or outputs limiting insight to what was previously discussed as ‘generic project management capabilities (Hidding & Nicholas 2017, p.81). The Victorian Auditor General’s report (VAGO 2015), found that while 70% of projects had a business case, only 38% contained what was considered a complete set of data, and only 10% undertook any form of benefits realisation. Much of the failure research relies on compilations of prior literature and has collated those findings, for example: (Fortune and White 2006) and (Nasir and Sahibuddin 2011) and has not suggested any findings that might extend beyond the boundaries of the task management of the project management discipline to include the input or output activities. It is unclear whether or not prior research has considered a broader scope, or that no negative outcomes were observed when looking at the impact or contribution beyond the project management processes.

It has been stated that the most common cause of project failures originates in the project management function (Al-Neimat 2005, Jones 2006, Dorgan, Dowdy et al. 2004, Oz 2001, Ewusi-Mensah 1997, Grenny, Maxfield et al. 2007), and aligning of IT with an organisation’s culture (Tilmann and Weinberger 2004), and this has directed much of the existing research to focus on the day-to-day issues of running projects and managing teams.
Humphrey, the creator of the Capability Maturity Model (CMMI) observed (Humphrey 2005, p.25) that ‘the principal problem was the lack of plans. In the early years, I never saw a failed project that had a plan, and very few unplanned projects were successful’.

To further illustrate the lessons learned from observation of projects in a case study environment, a phenomenon has been observed in project management called ‘fact-free planning’ (Grenny, Maxfield et al. 2007, p2). ‘Project leaders under pressure from various stakeholders determine deadlines, scope, deliverables and budget with little or no regard for the hard facts about what will actually be required. At other times, they base their estimates on facts, only to have the estimates ignored. In either case, the result is a set of project parameters and goals that is unrealistic from the beginning’. Reading between the lines it might also be construed that tension exists between those with domain expertise and the ‘pressure exerted’ by the non-technical representatives with an interest in the project.

Capers Jones (Jones 2004, p5) created a working hypothesis of the contributory factors of project failure as being ‘(1) poor quality control is the largest contributor to cost and schedule over-runs, and (2) poor project management is the most likely cause of inadequate quality control’. It is unclear in this example where ‘control’ of the project emanates from.

There has been an old adage in IT that “we don’t have a problem with project management, we just cannot estimate!“. While this statement is treated as a joke, like a lot of humour it has a basis in reality. Particularly for public sector projects, where the budget is often declared in a political press release, estimating (budget expenditure or project completion timelines) has always been fraught with dangerous assumptions. And when projects start to exceed their time and cost estimates the constant cycle of “new estimates and re-baselining” often relies upon
adding more resources to the project. Brooks argued that there is a non-linear relationship between resources assigned to a project and project output (Brooks 1975). As resources are added to a project there are other tasks that grow and reduce overall team productivity (Al-Neimat 2005, Grossman 2003). Estimating and project management are inextricably linked. It is important to understand that estimating is not a one-off event that happens before a project commences. Estimating is done constantly throughout the life of the project. This challenge with estimating is at the core of the difference between agile and waterfall (plan based) project management approaches. The underlying assumption behind all plan-based methodologies is that if only we do more planning then the project will be manageable. Agile methods, on the other hand, start with the assumption that planning will not be effective so it should be minimized.

A difference amongst studies about successful projects reported in the literature, is the criteria used in defining project success or failure. The CHAOS studies (amongst others) measure the success of a project as on time, on budget, with the full scope of requirements (Andersen 2011, Baccarini, Salm et al. 2004). However, critical commentators find these criteria incomplete because ‘they do not consider, for example, usefulness, value or user satisfaction’ (Emam and Gunes-Koru 2008, Eveleens 2009, Glass 2005, Jorgensen and Molokken 2006, Sauer, Gemino et al. 2007).

In addition to this variability of success criteria used in studies about projects, commissioning organisations also appear to pay little attention to assuring or understanding the nature of project success. (Marchand and Peppard 2008 p.10) observed that ‘very few companies actually track the benefits from IT investments and have no way of knowing what, if any, business benefits were realized’. The Victorian Government audit of IT projects (VAGO 2015 p.xii) found
that ‘of the 788 completed projects, a little over 10 percent have had their expected benefits assessed’.

Most companies measure the success of IT projects as meeting implementation deadlines, budgets and agreed requirements. Yet, projects can be on-time and within budget and deliver no actual business value according to Marchand and Peppard (2008). Whilst an investigation into success and failure measurement is a worthwhile endeavour, for the purposes of this research, the determination of success or failure will be the generally accepted on-time, on-budget with the agreed level of functionality - this was the criteria applied to the Queensland Health Payroll project by the Commission of Inquiry (Chesterman 2013).

2.3 Factor Analysis

Nasir and Sahbuddin (2011) conducted a comprehensive analysis of the literature about factors contributing to IT project success. They collated data from 43 peer-reviewed papers from 1990 to 2010. They grouped by frequency of mention in order to construct a hierarchy that appears to imply that if a subject is mentioned most frequently then it must be the most important. It was claimed that ‘in a result unique to our study, we found that the factors of clear and frozen requirements, realistic estimation of the schedule and budget, along with a competent project manager are the five most critical success factors of software projects’ (Nasir and Sahibuddin 2011,p.1).

Fortune and White (2006) described the critical success factors of projects drawn from a review of 63 peer-reviewed publications. They observed that there was ‘a lack of agreement between authors’ (Fortune and White 2006, p54) as to what were the critical success factors (CFS’s) for project success or failure, and that the ‘inter-relationships between factors was at least as important as the individual
factors’. Fortune and White (2006) grouped their data according to the kinds of approaches used by the 63 studies reviewed:

1. Survey and questionnaire data;
2. Case study semi-structured interview data;
3. Conceptual and theoretical papers.

Table 3 (below): Fortune and White’s (2006) portrayal of critical success factors summarising sixty-three (63) IT project failure studies - theoretical and empirical survey outcomes:

**Table 3: Fortune and White (2006) Critical Success Factors**

<table>
<thead>
<tr>
<th>Critical Success Factor</th>
<th>Empirical Data from Surveys</th>
<th>Empirical Data from Case Studies</th>
<th>Theoretical</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support from senior management</td>
<td>19</td>
<td>11</td>
<td>9</td>
<td>39</td>
</tr>
<tr>
<td>User/client involvement</td>
<td>11</td>
<td>7</td>
<td>6</td>
<td>24</td>
</tr>
<tr>
<td>Skilled/suitably qualified/sufficient staff</td>
<td>9</td>
<td>7</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>Effective change management</td>
<td>9</td>
<td>7</td>
<td>3</td>
<td>19</td>
</tr>
<tr>
<td>Clear realistic goals</td>
<td>16</td>
<td>6</td>
<td>9</td>
<td>31</td>
</tr>
<tr>
<td>Strong/detailed plan kept up to date</td>
<td>16</td>
<td>6</td>
<td>7</td>
<td>29</td>
</tr>
<tr>
<td>Good communication/feedback</td>
<td>14</td>
<td>6</td>
<td>7</td>
<td>27</td>
</tr>
<tr>
<td>Competent project manager</td>
<td>8</td>
<td>6</td>
<td>5</td>
<td>19</td>
</tr>
<tr>
<td>Strong business case/sound basis for project</td>
<td>8</td>
<td>6</td>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td>Good leadership</td>
<td>5</td>
<td>6</td>
<td>4</td>
<td>15</td>
</tr>
</tbody>
</table>

An alternative ‘first principles’ approach (Ward and Elvin, 1999) identifies a set of critical success factors, different to those identified by factor analysis, as comprising:
(1) Ensure that the intended outcome, objectives and benefits are appropriate for this IT project;

(2) Understand the organisation’s capability to actually carry out the intervention and identify areas where knowledge or skills are lacking and need to be developed;

(3) Involve the key stakeholders in a structured, open, and honest debate to elicit the factors and assess their specific relationships to the intervention and their likely impact;

(4) Allocate responsibility for action by the owners or the appropriate stakeholders.

Oz (1994) examined the failure of a large and very public project intended to provide a new reservation system (CONFIRM) for Hilton Hotels, Marriott Corporation, Budget Rent-A-Car, and American Airlines. Oz (1994) noted that a leading cause of the project’s failure was a failure of professional ethics, an issue that did not appear in any of the literature based on factor analysis or collations of previously reported findings. Ethics are a contributory factor that do not appear broadly in the literature even today. Oz (1994, p.35) stated that ‘the CONFIRM case contains many ingredients that are common in cases that have been reported in the media and trade journals.’ In the same article Oz (1994) cites the Chairman of the consortium developing CONFIRM stating that ‘some people who have been part of CONFIRM management did not disclose the true status of the project in a timely manner’ (Oz, 1994, p.29).

The ground-breaking work by Brooks (1975), ‘The Mythical Man Month’, followed his work at IBM where he discovered, while running the team developing OS/360, the then groundbreaking operating system for IBM’s new mainframe. Brooks identified that adding additional resources to the project actually slowed
the project down rather than improving performance. Brooks’ Law (Brooks, 1975), as it became known, states that ‘adding manpower to a late software project makes it later’. Brooks’ research, and subsequent publication, was grounded in the experience of an actual project, a very large and complex project – the creation of a new operating system for an IBM mainframe.

Research since the 1970s has focused on identifying critical success factors (CSFs) that might be leading indicators of project success or failure (deBakker, Boonstra et al. 2010).

Successful projects, according to Capers Jones, always excel in these critical activities: planning, estimating, change control, and quality control’ (Jones 2004 p.9). Later, Jones went on to say that ‘more than 50 years of empirical studies have proven that projects with effective quality control cost less and have shorter schedules than similar projects with poor quality control’(Jones 2006 p.7). In the current context it would be important to understand where does “quality control” come from, and what is meant by “quality control”. Is quality control narrowly defined as the quality of computer coding, or is it more broadly defined as the governance of the overall project conducted in a high quality manner delivering the agreed outcomes?

Three principal recommendations have been suggested for running projects effectively (Sauer, Gemino et al. 2007 p.2):

1. For project managers to structure projects into smaller units, to invest in selecting the right team and involving them in decision-making, and to invest their own time and effort in self-development;

2. For senior IT managers responsible for IT project managers to establish a focus for project management in their
organisation, create a project management career path, identify and develop the right individuals, and create real accountability through more effective performance management;

3. For senior business managers/sponsors to develop client-side understanding of project management and more actively involve themselves with projects for which they are responsible.

Factor analysis has produced essentially the same perspective on project failure for decades. One reason for this may be that this type of research collates the opinions of project observers and participants, and usually this is done after-the-fact. If the research into IT project failure was being conducted as “clinical research” there would be evidence of a “control group” to show that where particular factors did not exist, then project outcomes were improved and vice-versa. The factors are invariably presented as “facts”, without corroborating evidence, and without data to prove that their presence or absence had an influence on project outcomes. The research lacks evidentiary support that is convincing in its argument that these factors are indeed the causes of project failure, and avoiding (or applying) them will ensure improved project outcomes.

### 2.4 The Complexity of an IT Solution

In very large IT projects, the type which the Standish Group (Johnson 2015) have identified as having the lowest success rate, the complexity inherent in the solution being built is very great. With great complexity in the solution itself, added to the complexity of the technology being utilised, the need for experienced and skilled project management is increased.
‘Today, business processes are more complex, interconnected, interdependent and interrelated than ever before. Additionally, they reject traditional organisational structures in order to create complex communities comprised of alliances with strategic suppliers, outsourcing vendors, networks of customers and partnerships with key political groups, regulatory entities, and even competitors’ (Hass 2007,p.2).

It is this level of complexity which permeates every aspect of a project (Baccarini 1996), from the internal complexity of the business problem being solved (Al-Neimat 2005), to organisational complexity that complicates what should have been relatively simple (Drummond 1998). When discussing complexity in this context most projects would be looking at the complexity of the business problem to be addressed, the complexity of the technology being deployed, the inter- and intra-organisational complexity of dealing with competing demands (Thomas and Mengel 2008).

Project size and complexity are seen (Johnson 2015) as key drivers of project failure. The larger and more complex the undertaking the more likely that the project will fail.

The Standish Group data shows clearly that the bigger the project, the greater the risk and more likely that project is to experience failure. Standish Group classify the size of the projects as;

- **Small:** is generally under a million dollars in productive labor or less then 10,000 hours of productive labor.
- **Moderate:** is a million to 3 million dollars in productive labor or 10,000 to 30,000 hours of productive labor.
- **Medium:** is 3 million to 6 million dollars in productive labor or 30,000 to 60,000 hours of productive labor.
• **Large**: is 6 million to 10 million dollars in productive labor or 60,000 to 100,000 hours of productive labor.

• **Grand**: is over 10 million dollars in productive labor or over 100,000 hours of productive labor.

**Table 4: Standish Group (2015) all projects FY2011-2015**

<table>
<thead>
<tr>
<th>Project Size</th>
<th>Scale</th>
<th>SUCCESSFUL</th>
<th>CHALLENGED</th>
<th>FAILED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grand</td>
<td>Over USD$10m</td>
<td>2%</td>
<td>9%</td>
<td>16%</td>
</tr>
<tr>
<td>Large</td>
<td>$6m to $10m</td>
<td>8%</td>
<td>18%</td>
<td>25%</td>
</tr>
<tr>
<td>Medium</td>
<td>$3m to $6m</td>
<td>11%</td>
<td>28%</td>
<td>35%</td>
</tr>
<tr>
<td>Moderate</td>
<td>$1m to $3m</td>
<td>25%</td>
<td>29%</td>
<td>16%</td>
</tr>
<tr>
<td>Small</td>
<td>Under $1m</td>
<td>54%</td>
<td>16%</td>
<td>8%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

2.5 **Project Reporting**

A further topic in IT project management concerns the contribution of project control mechanisms and their impact project outcomes. Reporting has always been problematic for all forms of management where ‘much hard information is too aggregated for effective use’ (Mintzberg, Ahlstrand et al. 1998, p70), and managers often dispense with detailed reports without ever reading them (Mintzberg 1990). Another potential reason for project failure is not the lack of project control methods, but that methods, even though available and in place, are often not used. Good communication, one of the top ten issues identified by Fortune and White (2006) and represented in Table 3 (above) can only be considered ‘good’ if the recipient reads and understands the reports and is capable of identifying appropriate actions as a result of that comprehension.

This lack of project control utilisation, has also been linked to broader issues such as ethical conduct. In fact, failure to make oneself fully informed
(especially when the data is available) might be seen as a failure of accountability and ethical responsibility. Jones (2006, p.4) points out that ‘software project status reporting is often wrong and misleading’, while Oz (2001) and Ewusi-Mensah (1997) both reported incidents of unethical behaviour associated with reporting progress on projects. At least one senior executive reported: ‘they have deliberately concealed a number of important technical and performance problems’ (Ewusi-Mensah 1997 p.77).

Drummond (Drummond 1998, p.142) reported an interview with an executive at the London Stock Exchange about their failed Taurus project. ‘Everyone knew what Taurus was, until they tried to explain it.’ Projects suffer constant change. Especially after the project schedule and budget have been confirmed (Al-Neimat 2005), suffering from the twin problems of scope and feature creep. ‘Absorbing changing requirements during the project’ Jones argued (2004, p.9) is a constant challenge for all projects and project managers.

### 2.6 Normalisation of Project Failure

Beginning in 1995 Keil observed the escalating rate of IT project failure and its cost on business and government (Keil 1995, p.421). The generic phrase “poor project management” (Keil 1995 p.422) is far too broad to provide clarity for what actually drives project escalation and ultimately failure. Keil adopts the definition of escalation as being “continued commitment in the face of negative information about prior resource allocations, coupled with uncertainty surrounding the likelihood of goal attainment” (Keil 1995, p.422).

According to Keil “projects are more prone to escalation when they involve a large potential payoff, when they are viewed as requiring a long-term investment in order to receive any substantial gain” (Keil 1995 p.422-423). Keil touches on “psychological factors” which may impact a managers decision to continue with a
project that appears doomed to failure, and suggests that “escalation is more likely to occur when managers make errors in processing information” but does not delve deeper into why managers make those errors in processing information, whether there are different outcomes associated with different “types” of managers, or whether or not there are underlying factors as to how managers process the information coming to them.

Keil suggests that certain psychological factors may have contributed to escalation in the case reported. These factors include:

1. prior history of success,
2. high degree of personal responsibility for the outcome of the project,
3. errors in information processing, and
4. emotional attachment to the project.

Prior history of success correlates to Vaughan’s observations as to the contributory factors of Normalisation of Deviance. Where an organisation has not previously experienced negative outcomes they will continue to assume that taking the same actions or decisions will not produce deleterious results. The fact that failure had not occurred previously is not proof that their decision making was sound, rather it was “luck” that no disaster had previously befallen them. A well-researched example of Normalisation of Deviance is the NASA Challenger space shuttle disaster which occurred on January 28th 1986 (Vaughan 2016). In the specific case if the NASA Challenger space shuttle, various other launches had been successful despite components such as the O-Rings operating beyond their specified tolerances, and so it was assumed that earlier decisions to launch were sound and this decision would also prove to be sound. The most likely description is however that previous launches prior to the Challenger explosion were “lucky” that components operating outside of tolerances had not caused a disaster to
occur similar to what happened with the Challenger. A decision by NASA to implement processes to ensure that O-Rings were checked on future launches (the proximal cause) would do nothing to ameliorate the underlying cause (normalization of deviance).

Optimism bias in a project management environment (Prater, Kirytopoulis et al. 2017), may also account for why project managers maintain a “continued commitment in the face of negative information” (Keil 1995 p.422). But what is absent from the literature is why an experienced manager would suffer from what amounts to a delusional optimism bias in the face of hard evidence to the contrary. Does the project executive not understand the information being presented to them? Does the project executive somehow consider that they are immune from the risks and failures that the majority of projects face? What propels a project executive to operate under the assumption that their project will somehow be one of the very few to be successful? The fact that project executives ignore negative information about project escalation is supported by the findings of the case study that formed the basis of this research. Even the fact that project executives may suffer from optimism bias fails to clarify why an executive would remain optimistic despite all evidence to the contrary? Do they know something that no-one else knows? What conditions or conditioning lead the project executive to ignore clear evidence that their project is doomed to fail?

Continuing the research into project escalation, Keil, Rai and Mann (2000) had refined the definition of escalation to “a commitment to a failing course of action” (Keil, Rai et al. 2000.p631) and had identified “runaway systems that far exceed original budget and schedule projections. Keil, Rai et al (2000, p.632) commented that “projects that escalated had project outcomes that were significantly worse in terms of perceived implementation performance and perceived budget/schedule performance, as compared to those that did not
escalate” confirming that ‘runaway projects’ fail by almost every observable measure.

Similar to the findings of this research, Keil, Rai et al (2000) posited theories from the social and behavioural sciences as being potential drivers of executive behaviour during the conduct of a project, particularly when that project is demonstrating negative outcomes. Drawing on the escalation literature the authors suggested that “self-justification theory (SJT), prospect theory (PT), agency theory (AT), and approach avoidance theory (AAT)” (Keil, Rai et al, 2000 p.634) may be potential factors to explain project escalation.

Self-Justification Theory “posits that individuals tend to escalate their commitment to a course of action (and undergo the risk of additional negative outcomes) in order to self-justify prior behavior (Staw and Fox 1977 quoted by Keil, Rai et al, 2000). SJT is based on the notion that "individuals seek to rationalize their previous behavior...against a perceived error in judgement" (ibid)

Prospect Theory “posits that individuals exhibit risk averse or risk seeking behavior depending on how a problem is framed. Specifically, prospect theory suggests that individuals will exhibit risk seeking behavior in choosing between two negative alternatives, especially when the choice is between a sure loss and the possibility of a larger loss combined with a chance to return to the reference point (Whyte 1986 quoted by Keil, Rai et al, 2000). In other words, someone who has not yet come to terms with an earlier loss is likely to adopt a negative frame of reference and is, therefore, more likely to engage in risk seeking behavior”. (ibid)

It could be seen that prospect theory supports the theory of normalization of deviance, in that an actor holds out the prospect of the project being a success because they have not yet come to terms with an earlier failure.
Under approach avoidance theory, “escalation is conceptualized as a behavior that results when driving forces that encourage persistence seem to outweigh restraining forces that encourage abandonment (Brockner and Rubin 1985 quoted by Keil, Rai et al, 2000). These competing forces create a conflict over whether to continue or withdraw. According to approach avoidance theory, in escalation situations, the cost of persistence (a restraining force) is often overshadowed by one or more driving forces such as: (1) the size of the reward for goal attainment, (2) the cost of withdrawal, or (3) the proximity to the goal (ibid).

Under agency theory, “goal incongruency between principal and agent can create a situation in which the agent acts to maximize his or her own utility, rather than acting in the best interests of the principal. The concept of information asymmetry is central to all principal-agent models” (ibid). Information asymmetry is discussed in more detail in Section 5.1 (page 118) when discussing Goffman’s dramaturgy. Agency Theory is discussed in the context of how it plays out in the public sector in particular reference to ‘agency drift’ in Section 5.4 (page 139).

Keil, Rai et al (2000, p. 635) posit that “individuals exhibit risk averse or risk seeking behaviour depending on how a problem is framed”. Drawing on Kruger and Dunning (1999 & 2009), and in particular on their observation that the skills needed to identify competence in others are the same skills needed to perform a task (Kruger and Dunning 2009), one might argue that it’s not how a problem is framed, but rather how the receiver of the communication ‘hears’ the problem based upon their own internal cognitive biases and abilities. A skilled and practiced leader “when confronted by ill-structured problems, is shown to rely largely on non-verbalisable intuitive thought processes based on concrete experience” (Silverman 1985). This is in contrast to the non-expert as project executive who has no ‘intuitive thought processes’ upon which they can rely. “It is well established that intuition plays an important role in experts’ decision making and thinking.
generally” (Chassy and Gobet 2011). The role that intuition plays was supported by Vo-Tran (2014) where he observed that skilled and experienced practitioners were able to “intuit” a response to a problem, where the inexperienced tradesman referred to process and procedure upon identifying the same problem (Vo-Tran 2014).

Zhang, Keil, Rai and Mann (2002) constructed a neural-network application to model the likely contributory factors of project escalation. What this solution discovered was that the most likely cause of a runaway project was the “sunk cost” (Zhang, Keil et al. 2002 p.127). Essentially, where a project has already expended significant sums, then the predilection is to continue the project in order to try and spend their way out of trouble. This finding offers substantial support to the definition adopted by Keil in his earlier published works describing a runaway project as being “continued commitment in the face of negative information about prior resource allocations, coupled with uncertainty surrounding the likelihood of goal attainment” (Keil 1995 p.422). The more common phrase of ‘good money after bad’ would appear to apply here, and resurrects one of the research questions posed at the outset of this thesis:

• That at least a large majority of organisations involved in IT project developments have ignored the lessons learned and the published research

Keil and Mahring (2010) continue their research into the practical observation of runaway projects, and construct a framework for dealing with project escalation. In particular they refer to “the mum effect” in which executives or project team members “have been ignored (or worse still, punished) for having reported problems or raised concerns” (Keil, Cule et al. 1998 p.18). This is consistent with findings that “the involvement of non-IT stakeholders can actually work detrimentally and confound and confuse proceedings, even causing error”
(Engelbrecht, Johnston et al. 2017 p.1003). Engelbrecht, Johnston et al (2017, p.1004) additionally observed that “non-IT experienced management, placed in a position of authority may be influenced by some suppliers or colleagues to whose knowledge they had access, and insist on a certain course of action”.

Lyytinen (1988) observes that “scholars have shown that problems with IS are wide-spread and pervasive”. Lyytinen opines that most research has suffered from two weaknesses:

- That IS failure has been poorly articulated, and
- That the majority of research has been undertaken from the management perspective which he defines as providing “inadequate models of IS failure and considered too little the environment and types of IS failure” (Lyytinen 1988 p.45)

Lyytinen (1988) defines what was at the time of publication a new concept that he termed “Expectation Failure”.

Expectation Failure is defined as “a gap between stakeholders’ expectations expressed in some ideal or standard and the actual performance” (Lyytinen 1988 p.46). Lyytinen defines two different failure scenarios – development failure, and usage failure. For each of these Lyytinen outlines different characteristics or distinctive types of failure. In the research he also distinguishes between “dead or life” failures (Lyytinen 1988, p.50). Viewing failure from the perspective of different stakeholders, and considering the failure in the context of ‘dead or alive’ offers an interesting perspective.

Contrasting the ‘dead or alive’ issue with Keil’s terminology of “escalated” or “run-away project” one might take the view that from the perspective of (say) a computer programmer working on the Queensland Health payroll project there
could be an interpretation that says ‘the solution went live, it is paying staff, and it meets its basic requirement’, therefore the project could be regarded as a successful completion of the programmers task.

Continuing their research into Information Systems Failure; Keil, Cule, Lyytinen and Schmidt (1998) state that “one explanation for the high failure rate is that managers are not taking prudent measures to assess and manage the risks involved in these projects” (ibid:p.76).

Figure 5 – A Risk Categorization Framework (Keil, Cule et al, 1998)

Keil, Cule et al (1998) created a “risk categorization framework” (figure 5) based on their Delphi studies of the contributory factors of information systems project failure. In the “risk framework” the Customer Mandate quadrant “requires risk mitigation strategies that create and maintain good relationships with customers and promote customer commitment to the project”. The customer mandate quadrant is seen by the participants as being of high-risk to project outcomes and possessing a low-level of control by the project manager thereby
creating potentially ‘life-threatening outcomes’, if not managed effectively. This quadrant continues the theme developed in much of the research literature of the importance of senior management commitment to the project.

Wu, Rose and Lyytinen (2011) considered the outcomes and performance of what they termed “black swan projects”. Black Swan Projects are projects “where knowledge from previous projects do not provide significant insight into how they can be managed” (Wu, Rose et al. 2011 p.1).

Where the project executive with ultimate accountability and responsibility for the projects’ success, failure and outcomes has no (or limited) prior project experience it might be argued that every undertaking represents a “black swan project”. In this instance, the project executive is not bringing to the project any prior experience or insight that could be relied upon to deliver a successful project outcome.

Wu, Rose and Lyytinen (2011) argue that project executives faced with a “black swan project” have the option of scaling up known project management methods, but they also argue that this approach appears to be highly ineffective. Similarly, Vo-Tran (2014) found that executives lacking domain competence will rely upon known methods and procedures when faced with challenging tasks, while experts will rely on their experience to construct a mental/cognitive model and heuristics to ‘intuit’ an appropriate course of action. The lack of specific domain knowledge and experience denies the project executive the ability to ‘intuit’ an appropriate response to project or incident stimuli. What this means is that where the expert ‘knows’ what a specific stimuli or event might mean for the project, the unskilled manager will instead rely upon procedure to determine what action to take.
According to Wu, Rose and Lyytinen (2011, p.2) “prior work that has examined how managers can recognize and measure a project’s level of complexity, argue for a need to modify the project management process to fit the unique nature of managing highly innovative information technology projects. This need to consider changes to the basic IT project management framework can be crucial for the success of highly innovative or radical IT projects”.

Lyytinen (1988) observed that project success and failure needs to be considered from the lens of the stakeholder. With this as a working principle a response to a project stimuli from the perspective of an inexperienced IT project manager would be any set of conditions that they have not previously experienced. Applying the lessons learned from Kruger and Dunning (2009) in this situation the researcher might postulate that, the project executive will over-estimate their competence and demonstrate a high degree of unjustified confidence in their ability to perform these complex tasks. This was demonstrated in the Queensland Health payroll project, where the technically inexperienced executive increasingly acted independent of the advice from the Departments own experts.

2.7 Expert Leadership in IT Projects

Goodall (2006) examined “expert leadership” where the research shows that ‘organizations on average perform better when they are led by individuals with expert knowledge. In random samples of 35,000 US and UK workers, we found that a boss's technical competence is the single strongest predictor of a worker's job satisfaction. Our latest research suggests that this happens because expert leaders understand how to create the right work environment, and how to appropriately assess, consult and support staff’.

Goodall (2006) studied the correlation between University rankings and the citations of University presidents (the most highly ranked leader of a University
irrespective of local title). A list of the world’s Top 100 Universities according to Institute of Higher Education at Shanghai Jiao Tong University in their Academic Ranking of World Universities was used as the basis for identifying the candidate institutions of higher education. Data was then collected on the citations of the Presidents (Vice-Chancellors) of the Universities.

Goodall’s findings state that “the most highly ranked universities have leaders who are more highly cited” (Goodall 2006 p.9). The research discussed ‘outliers’ and noted that “there are top universities led by presidents with few or no citations. However, these cases are in a minority” (Goodall 2006 p.11).

There was a clear correlation between the research expertise and reputation of the University President and the global ranking of that institution.

Goodall extended this research into a longitudinal study (Goodall 2009) and found that “on average the research quality of a university improves some years after it appoints a president (vice chancellor) who is an accomplished scholar” (ibid:p.1).

Goodall noted four themes which emerged from this longitudinal study (Goodall 2009 p.3):

- First, scholars are seen as more credible leaders. A president who is a researcher will gain greater respect from academic colleagues and appear more legitimate. Legitimacy extends a leader’s power and influence.

- Second, it is argued that being a top scholar provides a president with a deep understanding or expert knowledge about the core business of universities. This informs a president’s decision-making and strategic priorities.
Third, interviewees suggested that it is the president who sets the quality threshold in a university, and, therefore, that the bar is raised when an accomplished scholar is hired. Thus, a standard bearer has first set the standard that is to be enforced.

Finally, a president who is a researcher sends a signal to the faculty that the leader shares their scholarly values, and that research success in the institution is important. It also transmits an external signal to potential academic hires, donors, alumni and students.

In response to a call by Khurana and Nohria (Khurana and Nohria 2008) to “make management a true profession”, Goodall has argued that management is not what organisations do. Management is a means of supporting organisations to execute their expertise, ‘occupations such as medicine, architecture or law require expertise of a technical kind, such that failure to conform to the standards imposed by their professions could lead to loss of life or freedom. These professional enterprises still require management systems and managers in order to operate. Thus the two -- technical expertise and management expertise -- are not interchangeable” (Goodall 2010 p.3).

Management has been described (Peter Drucker cited in Cohen 2008,p.228) as having a focus on “hygiene matters” and on attention to information and compliance and should be seen as distinct from leadership. While management is required in all organisations, management does not replace leadership which has been shown conclusively to be positively correlated with technical expertise in the specific domain. For example, in studying professional basketball teams in the USA, Goodall, Kahn et al (2011) has shown that “leaders draw upon their technical ability in, and acquired expert knowledge of, the core business of their organisation” in order to produce above-average results.
Goodall’s research identifies that, for the data set investigated, “former NBA all-stars have much higher average winning percentages and more playoff success than the other groups, and non-players have the least success of the three groups” (Goodall, Kahn et al. 2011, p.18).

Goodall, Kahn et al (2011) showed that the competence and technical abilities of the leader are strongly correlated with positive outcomes in basketball, Formula 1 motor racing, hospital administration, and university administration (amongst others) and that this may be generalisable to other domains. While this has not been tested in information technology projects, these findings are consistent with the themes found in this research and suggest that this would form a fruitful stream of future research.

‘Someone implementing IT needs to know which levers to pull, in which context, and at what time’ (Dwivedi, Wastell et al. 2015, p.149). Figuring out which levers to pull, in which context and at what time requires competence and the intuition borne of experience. Project leadership requires expertise.

2.8 Experts Require Deliberate Practice

In the world of ‘pop-psychology’ Malcolm Gladwell (2008) argued that to become an expert one needs ten-thousand hours of practice. While Gladwell’s assertions are ‘stretching the truth’ they are not without foundation. ‘In domains where expert performance is measurable, acquisition is gradual and the highest levels are only attained after 10 years of intense preparation—even for the most talented’ (Ericsson and Ward, 2007 p.346). To achieve the performance of an expert one needs to undertake ‘deliberate practice’ (Ericsson and Pool, 2016 ch.5). Ericsson distinguishes between repetition and deliberate practice, emphasising that it is not enough to simply repeat what one has always been doing. Repetition, according to Ericsson, does not lead to improvement and certainly does not lead
to expert performance in any field. Expertise requires a deliberate and determined effort to improve at the task, and to measure oneself against a goal (Ericsson and Ward, 2007, p.348). In their book ‘Peak’, Ericsson and Pool (2016, p.13) relate that someone that has been performing a task for a very long time will rapidly achieve a satisfactory level of performance, but the mere repetition will not make them an expert. In a scientific explanation of the adage “one years experience twenty times over”, the authors demonstrate that new doctors were better at performing diagnoses than doctors of twenty years routine experience. Rising above ‘acceptable performance’ requires that the practitioner undertakes ‘deliberate efforts to improve’ (ibid.p.14) without which their skills will deteriorate.

Similarly, in the business of managing large and complex information systems projects, it takes years of experience and practice to acquire the skills, insights and intuition necessary to ensure a project meets its objectives. And it requires a deliberate and thoughtful effort to constantly measure performance and to target improvements. It might be argued, in the context of this research, that one does not become an expert at project management simply by being appointed to the position.

2.9 The Peter Principle

The Peter Principle: Why Things Always Go Wrong was written in 1969 by Laurence J. Peter and Raymond Hull. The Peter Principle is summarised as ‘Every new member in a hierarchical organisation climbs the hierarchy until he/she reaches his/her level of maximum incompetence’ (Pluchino, Rapisarda & Garofalo, 2010 p.467). The essence of the Peter Principle is that as individuals receive promotion based on their performance at one level in the hierarchy, and as they ascend to ever higher levels, the skills and competence required to succeed at those new levels is different to the skills they exhibited and for which they were promoted. Ultimately an individual reaches a level in the hierarchy where they are no longer
competent to perform the task and they cease to be promoted. Peter and Hull (1969, p.173) observed that ‘work is accomplished by those employees who have not yet reached their level of incompetence’.

In critique of the Peter Principle, Lazear (2004, p.142) argues that a lower performance after promotion is to be expected, and firms should account for this in their hierarchical strategies and make allowance for new promotees where a ‘decline in ability that is seen after promotion is the natural outcome of a statistical process that displays regression to the mean’.

In any event, it is clear that much research supports the notion that when an individual is moved to a role that requires new and unfamiliar skills their performance will decline (at best) and be seen as incompetent (ibid).

2.10 Summary

The preponderance of research has focused on identifying the factors that have contributed to project failure. These research outputs have consistently highlighted the leading causes of project failure, with the following being the most regularly cited causes (Fortune & White, 2006):

- a lack of support from senior management
- projects must have clear and realistic goals
- strong and detailed plans, kept up to date
- good communication and feedback
- user/client involvement
Testing these criteria against the Queensland Health payroll project leaves significant gaps in promulgating these criteria as serious contenders for being the leading contributory factors to project failure.

The literature on IT project management and project failure does not provide evidence of the quantum or type of senior management support that would objectively produce a different project outcome. However, when one digs more broadly into the questions of quality management it can be seen that the role and contribution of senior management is far more explicitly drawn out. ‘The crucial role top management plays in driving company-wide quality management efforts has been recognized by practitioners and researchers as one of the major factors for achieving successful quality performance’ (Subba-Rao, Solis et al. 1999, p1050). Further it is argued that ‘it is the role of top management to formalize the company quality values and vision and project them in a clear, visible and a consistent manner (Puffer and McCarthy 1996, Waldman, Lituchy et al. 1998). This clarity of the role of senior management is not called out in the literature on IT project failures, yet ‘lack of senior management support’ is highlighted many times over as the leading cause of project failure, without ever indicating what senior management support entails. It has become an article of faith in the IT literature and more broadly an excuse for project failure, that ‘lack of senior management support’ causes projects to fail without providing any evidence for what could be done differently. If senior management support requires clear and visible commitment to quality values, it is difficult to understand exactly how a senior executive with little to no exposure to IT and its execution would be in a position to lead the determination of quality standards and values.

Clear and unambiguous goals, frozen according to some research papers (eg: Nasir & Sahibuddin, 2011), is an unrealistic, and not desired objective when viewed through the lens of agile methodologies. Clear, frozen, realistic project
goals is more reflective of traditional (waterfall) methodologies which for decades have practiced this method, with very poor project outcomes (refer Chaos Reports from Standish Group, 1994 to 2015). Is the lack of clear requirements a cause or a symptom of this example of project failure?

Strong and detailed plans may be appropriate where they allow flexibility for changes in circumstance as the project progresses. There is an implication in the statement “strong and detailed” that these plans may be inflexible. Several of the failed projects discussed in Chapter 2 exhibited inflexibility to the degree that when budgets were not approved the project continued unabated only to end in a completely predictable failure. The plan for Queensland Health was known, updated regularly, constantly reported. Deviance from the plan and risks with the plan were highlighted by consulting reports, so it becomes questionable whether or not a strong and detailed plan is a cause of failure or a consequence of some other factor in the project.

Good communication and feedback might be considered a generic requirement for all management undertakings. As discussed above previously ‘the job of managing is fundamentally one of processing information, notably by talking and especially by listening’ (Mintzberg 1990, p.21) but each individual sees themselves performing on a stage and discloses and/or withholds information according to how they perceive that stage (Goffman 1959, Manning 2008). Project management is at its core a task of organising groups of people to produce an outcome, and so communication and feedback is clearly an important component, as it is with every management undertaking. However, to single communication out may be just too generic to be listed as a major contributor to IT project failure, and in the instance of this case study, there was an abundance of formal and informal communication. As the project was an obvious failure, it is in hindsight that the researcher can observe that the communications may not have met the
standard of being “good”. A broader question emerges however, in the heat of the project what would constitute good communication that would have a positive impact on the projects outcome?

User/Client involvement seems to be one of those criteria that is self-evident. Engelbrecht et al (2017) found that an unskilled user is likely to exert a negative influence on a project, taking their lead from sources that are not optimal for a positive project outcome.

The Agile Manifesto has user/client involvement as one of their twelve core principles: ‘Business people and developers must work together daily throughout the project’ (Agile-Manifesto 2001). The agile approach demands that business and technical people work side-by-side. User/Client involvement should not mean that all decision making is turned over to the user/client, rather as in the agile manifesto “working together” seems to be an appropriate objective.

Nothing raised in prior literature explains how a project, in this instance the Queensland Health Payroll project, can apparently ignore every lesson learned and every research published. The literature does not offer any clues as to why an informed and professional management team of clients and vendors will “carry on regardless”.

The International Federation of Information Processing¹ (IFIP WG 8.6) ask ‘Is the fault one of theory and inadequate understanding? Or is the problem one of knowledge transfer, the failure to embed research knowledge in the working practices of managers and policy-makers?’ (Dwivedi, Wastell et al. 2015,p.v)

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¹ The International Federation for Information Processing (IFIP) is a global organisation, established in 1960 under the auspices of UNESCO, for researchers and professionals working in the field of information and communication technologies (ICT) to conduct research, develop standards and promote information sharing.
In this research the main question can be restated in IFIP terms as “if transference is the problem, why is that a problem?”. It remains unclear why there would be a problem with knowledge transfer. The basic principles of project management: time, cost and output, have been known for millennia and refined substantially in the industrial and technological revolution that has occurred subsequent to World War Two, and the digital revolution that has introduced modern methods such as agile, scrum and cloud computing.

Why are managements ignoring the lessons learned, and the advice that is being presented before, during and after projects have started and failed? There is nothing in the literature to answer this conundrum.
Chapter Three - Research Methodology

The following chapter outlines how this research was undertaken. It sets out the rationale for undertaking inductive case-based research and is followed by a description of the method and the steps undertaken. It explains how the data was analysed and how topics and themes emerged from the data to inform the study.

3.1 Introduction

That Information technology projects continue to exhibit very poor rates of success, suggest that the research and education with respect to project failure has:

1. Failed to identify the main contributory factors of IT project failure; and/or

2. That at least a large majority of organisations involved in IT project developments have ignored the lessons learned and the published research; and/or

3. That while the main causes of IT project failure have been identified and many organisations do attempt to address those contributory factors, the implementation of solutions to these problems is both very difficult and/or in conflict with other more powerful business drivers.

The corpus of published literature on the subject of failed IT projects lacks evidence based research drawn from comprehensive case studies (Dwivedi, Wastell et al. 2015). This research contributes to addressing that gap, and aims to identify what occurred in a specific, very large project, and what led to failure in that instance. From this case study it is hoped that confirmation of previously
identified contributory factors may emerge, or else that a new theory may be constructed leading to further research that might confirm these findings as being generally applicable. A single case study, even one as complex as the Queensland Health Payroll project, is still only a singular event and cannot produce outcomes which are generalisable. But this case is of ‘very special interest … and the study of (it’s) particularity and complexity … to understand its activity within important circumstances’ (Stake 1995,p xi) is worthy of being undertaken.

Thus, this research needs to follow an approach that will lead to formative ‘theory building’ rather than the more common ‘theory testing’ (Eisenhardt and Graebner 2007). Theory building is more suited to a comprehensive case study approach, which would subsequently lead to future research opportunities to test any emergent or confirmatory hypothesis. The goal of this research is to “understand more about the reasons why (project failure) occurs” (Keil 1995,p.423) and has therefore employed an inductive case study approach.

The process of ‘theory building’ is undertaken by examining a case in detail by starting with little or no preconceived notion of the theory that will ultimately emerge from the data (Eisenhardt 1989). ‘Induction is viewed as the key process, with the researcher moving from the data to empirical generalisation and on to theory’ (Heath and Cowley 2004,p.144). Eisenhardt (1989) refers to this method as ‘Inductive Case Oriented Research’.

In explaining inductive case oriented research Eisenhardt (1989 p.532) draws heavily upon the work of Glaser, Strauss and Corbin (Glaser and Strauss 1967) and (Strauss and Corbin 1975) in describing grounded theory. ‘Building theory from case studies is a research strategy that involves using one or more cases to create theoretical constructs, propositions and/or midrange theory from case-based, empirical evidence’.
‘Grounded theory is predicated on an emergent logic. This method starts with a systematic, inductive approach to collecting and analyzing data to develop theoretical analyses. The method also includes checking emergent categories that emerge from successive levels of analysis through hypothetical and deductive reasoning’ (Charmaz 2008, p.155).

While there are a great many similarities between inductive case oriented research and grounded theory (Charmaz 2008, Glaser 2004, Eisenhardt 1989, Eisenhardt and Graebner 2007), there are also some differences in methodologies commonly employed. Inductive case oriented research proposes the use of historical and archived data as foundations for data analysis (Eisenhardt 1989), while grounded theory proposes the use of interviews and observation, and the collection of field notes (Glaser 2004, Heath and Cowley 2004, Bertero 2012, Charmaz 2008a, Charmaz 2008b, Hallberg 2006). Inductive case oriented research is more of an “archeological dig”, with attributes akin to action research (Hinchey 2008, p.4) where the essential characteristics of this type of research are:

- It is conducted by those inside a community rather than by outside experts.
- It pursues improvement or better understanding in some area the researcher considers important.
- It involves systematic inquiry, which includes information gathering, analysis and reflection.
- It leads to an action plan, which frequently generates a new cycle of the process.

Multi-Grounded Theory (Goldkuhl and Cronholm 2003, Goldkuhl and Cronholm 2010, Goldkuhl and Lind 2010, Axelsson and Goldkuhl 2015, Cronholm
2004) and Informed Grounded Theory (Thornberg 2012) seek to integrate established research and theory into the data collection and analysis approach of Grounded Theory in order to provide a more informed view of the domain being investigated.

Multi-Grounded Theory takes a more comprehensive approach to grounding the theory in three constructs, using prior theory as data informing the inductive process, as well as the observed data:

- ‘Empirical data (preferably collected in mainly an inductive way) – empirical grounding;
- Pre-existing theories (well selected for the theorised phenomena) – theoretical grounding;
- An explicit congruence within the theory itself (between elements in the theory) – internal grounding.’ (Axelsson & Goldkuhl, 2015, p. 2)

Both, inductive case oriented research and grounded theory, form part of the larger body of qualitative data analysis (QDA) approaches, and both have as their objective an emphasis on the development of a theory to explain observed phenomena, rather than testing a theory through hypothesis testing applied to observed data.

3.2 Research Approach

For this study the observed phenomenon (the main concern) is the ongoing and continual failure of information technology projects, as was discussed in Chapter 2. For the purposes of this research, failure has been defined by the inability to deliver on time, to an agreed budget, and to meet the value and quality objectives of the enterprises that the systems are meant to serve.
The methodology being utilised to examine this case is inductive case study, informed by grounded theory (Glaser and Strauss 1967). Grounded theory was designed with the intent of ensuring that ‘theories systematically emerge directly from data’ (Martin and Gynnild 2011, p20). The term ‘grounded’ is intended to imply that the emergent theories are grounded in the data and not generated \textit{a priori} and then applied to surveys or examples in an effort to prove the theories.

In grounded theory the core problem is called the ‘main concern’ (Bertero 2012), and is the central focus of the grounded theory inquiry. By investigating the social constructs that exist in and around the main concern, inductive case-oriented research is looking to tease out answers to the question ‘why?’ (Charmaz, 2008).

‘The grounded theory method begins with inductive strategies for collecting and analyzing qualitative data for the purpose of developing theories’ (Charmaz, 2008, p.1). For this case study that has meant collecting the project data and interview transcripts for examination, and for the data within those documents to “emerge” an appropriate theory as to the contributory factors for project failure.

The reason that inductive and grounded approaches to qualitative research have grown in prominence (Eisenhardt and Graebner 2007) is because the development of theory by ‘combining observations from previous literature, common sense, and experience’ (Eisenhardt 1989, p532) was thought to have a tenuous connection to the data using other qualitative research methods.

The method typically used in inductive and grounded approaches is described as ‘the data are analysed and coded, ideas and potential insights will begin to develop which are recorded in theoretical memos; it is the data that develops theoretical sensitivity. The imagination and creativity are used in memo writing and are essential if a theory which enhances knowledge and understanding
is to be achieved; however, the data are allowed to speak for themselves and encompass all other considerations’ (Heath and Cowley 2004,p.144).

Seeking to use this kind of method in the present research, all of the available data (archival material) on a significant failed project was gathered and examined for clues and trends perceived in the data which may then be examined for their potential causal effect on the projects’ outcomes. These observations and inferences are the empirical data, from which theory has been induced.

3.3 Inductive Case Study Methods

Inductive case study methods, start with collecting and analysing data for the purposes of developing theories (Charmaz 2008). And while data analysis may be influenced by the beliefs, prior experiences, and readings of the researcher (Heath and Cowley 2004), any researcher held preconceptions as to the prevailing theories or contributory factors should be consciously suspended until theories emerge from the data (Baker, Wuest et al. 1992). This does not mean that the researcher should ignore, forget, or deliberately exclude all prior knowledge and research. Ignoring everything that has gone before may lead the researcher to develop theories that are already fully exposed, or, worse, to trivialise the problem being addressed (Thornberg 2012).

The inductive approach is the method of knowledge development proposed by grounded theory and central to any grounded and inductive case study methodologies undertaken (Eisenhardt 1989, Eisenhardt and Graebner 2007).

The methodological steps for this research project are as follows (adapted from (Sbaraini, Carter et al. 2011) (see figure 7 for a graphical representation):

1. Data Collection and Cataloguing
2. Coding and Comparing

3. Analysis

4. Comparison with established theory and existing literature

5. Theoretical Saturation

6. Production of a Substantive Theory.

As is to be expected in an inductive case study research project the literature review will emerge in stages as hypotheses are identified and explored. ‘Induction moves from the particular to the general: it develops new theories or hypotheses from many observations. This means that grounded theory studies tend to take a very open approach to the process being studied’ (Sbaraini, Carter et al. 2011).

Data Collection and Cataloguing is undertaken simultaneously. As data is collected the inductive researcher commences analysis. Sometimes the analysis will lead to other streams of investigation. Data Collection, Coding and Analysis are parallel and recursive activities.

For this project, the initial set of data was archival and drawn from the public records of the Queensland Royal Commission of Inquiry, supplemented by additional material requested through the Freedom-of-Information (FOI) process. Should additional clarification be required, various options exist for sourcing additional data, including: vendor records, additional FOI requests, and direct interviews.

Coding and Comparing is the process of coding the data as it is collected and analysed. Coding and codes should emerge from the data and not from an a priori model created from pre-existing research external to the project or case
being examined. Having a ‘preconceived model’, against which coding and classification occurs, would risk influencing the findings and not allowing explanations/theoretical constructs/themes to emerge inductively from the data.

Analysis incorporates collation of the coded data and memo-writing as the researcher gathers their thoughts throughout the project, with the researcher constantly analysing the data and thinking about the consequences of what has emerged so far. Often this will require the researcher to delve into the extant literature as it relates to the emerging coded themes (Cronholm 2004, Axelsson and Goldkuhl 2015). Wading through the project documents and interviews leads the researcher to go in and out of an ongoing literature search to make sense of the data that is emerging. Unlike a more linear approach to developing a thesis, inductive case study utilising multi-grounded theory is a constant iteration of emerging concepts, testing those concepts, examining the literature, discarding concepts and continuing to question the data.

‘Analysis raises questions, suggests relationships, highlights gaps in the existing data set and reveals what the researchers do not yet know’ (Sbaraini et al., 2011.p.3). The circular iterations continue until nothing new is emerging from the data, and saturation has been achieved. According to Sbaraini et al., (2011), theoretical saturation is where the researcher has reached the (subjective) point in data collection, analysis, and coding where nothing new appears to be emerging. The data has been saturated. It is thought that any further analysis will only confirm the findings already established and will not reveal anything new.

Production of a Substantive Theory occurs as a result of the concepts emerging and coalescing. Of particular note in grounded theory: the emergent theory is considered to be applicable only to the case being examined and should be amended or disproved by ongoing and further research.
Testing and grounding of the emergent theory, or theories, will need to be undertaken following the principles of multi-grounded theory. Namely, all emergent theories will need to be grounded explicitly using theoretical matching, explicit empirical validation, and internal validity (Cronholm, 2004).

The task of induction requires the researcher to understand the decision making that was being made at the time that those decisions were made, with the information that was available to members of the project at that time (Vaughan 2016 and Dekker 2014).

### 3.4 What, When, How and Why

To understand the contributory factors of project failure it becomes necessary to not only observe and document WHAT happened, but crucially to understand WHY certain events or decisions were taken at the time that they were taken. It is necessary to reconstruct, as far as possible, the circumstances that existed at the time that crucial decisions were taken so that the researcher may understand the forces at play and crucially what was known, by whom, and when they knew what they knew.

Vaughan (2016) investigated the Challenger space shuttle disaster and developed new theories to explain how an organisation of experienced, qualified and concerned individuals could make what in retrospect appeared to be ill-informed and careless decisions. Exploring ‘the why’ of what happened Vaughan identified a phenomenon which she labelled as “The Normalisation of Deviance”. The significant departure in Vaughan’s work from other investigations was her insistence on reconstructing the events and data flows surrounding the incident as it unfolded, “To understand decision making in any organisation, we must look at individual action within its layered context: individual, organisation, and environment as a system of action” (Vaughan, 2016, ch.2).
Vaughan (2016, ch. 2) further opined that ‘individual choice is constrained by institutional and organisational forces’, undermining the notion of ‘amoral calculations’ - project participants attempt to make the best decisions given the data available at the time, and within the known or experienced constraints of the institutional and organisational forces. With this as a guiding principle of the research, it was imperative to maintain the view that executives and managers were ‘doing the best that they could’ and were not acting in an amoral manner. Deeper insights were needed, and the researcher was required to go beyond the surface level of the data to identify theories that might explain the observed phenomena.

3.5 Primary Data Collection

A Commission of Inquiry was established under an Act of the Queensland Parliament to conduct ‘full and careful inquiry, in an open and independent manner, into the implementation of the Queensland Health payroll system’ (Chesterman, 2013, S.3.1). This Commission was led by a former Justice of the Supreme Court and was empowered with the ability to compel testimony equivalent to any Court of Law.

The commission compiled witness statements from 181 individuals involved in the project, and recorded testimony from each person over a three month period. The complete set of documents pertaining to this enquiry are available at http://www.healthpayrollinquiry.qld.gov.au. These documents formed a core component of the data set which was utilised by this research and comprised a total of 3,850 pages.
Additionally, there were many documents that were not published by the Commission of Inquiry. A series of Freedom-of-Information requests was made to several Government departments and agencies to obtain project documentation specific to the Queensland Health payroll project. These documents totalled some 5,000 pages of material.

The primary case study documents comprising the raw data collection were drawn from two sources:

1. the published files of the Queensland Commission of Inquiry (http://www.healthpayrollinquiry.qld.gov.au, 2013) into the Queensland Health Payroll Project (refer Appendix one); and

2. documents obtained under freedom of information (FOI) requests to the Department of Health Queensland, and to the Queensland Treasury Department (refer Appendix two)

In total, approximately 200 source files were obtained. The documents were initially in the form of concatenated PDF files and were separated into individual documents. Once disaggregated, there were 355 files, of which 116 files were witness statements from the Commission of Inquiry, and the balance of 239 files which have been sourced by FOI. The documents sourced by FOI contain multiple records in each file, bringing the sum total number of individual files and documents to be examined to approximately 1,000.

The total number of pages of witness statements amounted to 3,850. In addition there was the collection of project documentation that exceeded 5,000 pages of emails, reports, project plans and other data.
Figure 6: data collection process
To examine the case from the perspective of a timeline of events, of data and advice that was available at the time, to the participants, the researcher must endeavour to reconstruct the project from the available information. Dekker (2014) refers to this method of investigation as being ‘inside the tunnel’.

Inside the tunnel ‘is the point of view of people in the unfolding situation. To them, the outcome was not known (or they would have done something else). They contributed to the direction of the sequence of events on the basis of what they saw on the inside of the unfolding situation. To understand human error, you need to attain this perspective’ (Dekker, 2014, p.18). Understanding the Queensland Health payroll project from a perspective that is reflective of the experience of the project executives and team members as events unfolded is critical to the inductive case study process. In order to emerge a theory or theories that may potentially be applied to working projects it is imperative that the actions and decisions that were taken throughout Queensland Health payroll project are understood in the context within which they were experienced at the time.

Figure 7 illustrates the research process and procedural steps.

- **Step 1**: Capture the data from the project documents and witness statements and map these into a timeline, represented by a Gantt Chart.

- **Step 2**: Capture the issues from the project documents and witness statements into NVivo, recording memos’, searching the literature and identifying themes. Constantly refine as new themes emerge.
- **Step 3**: Validate findings utilising the Stanford Topic Modelling Toolkit, map keyword findings back to major themes for consistency verification.

- **Step 4**: Test concepts by submitting essays into the public sphere

- **Step 5**: Return to Step 2 and keep repeating until theoretical saturation is achieved

**Figure 7 - Research Process**

The approach that was taken in this research was to examine a single, very large and complex project and to extract from the data the identifiable contributory factors of failure for this specific project. Described next is the process of how every artefact, every document was examined and tagged with observable behaviour.
Extensive memo writing yielded a large volume of observations about the topics, issues and ideas which were tagged.

**STEP 1:**

Firstly, each file was mapped into a Gantt chart using OmniPlan Project Management software (version 2.4.1). The purpose of this exercise was to map the origin, the source, and the date that each file was created. This mapping allowed the researcher to construct a view of the timeline of the data and the interactions between the individuals, identifying what was communicated between them, and when that communication took place. The objective of this mapping was to determine ‘what was known by whom, and when’.

All of the available data from the project files (refer Appendix two) was entered into the project Gantt chart to map out the flow of information as it actually occurred (refer to timeline in chapter 4). This allowed the researcher to ‘observe’ the project as if the researcher were involved.

**STEP 2:**

In the next step, attention was turned to witness statements from the Governments Commission of Inquiry. The files (Appendix one) were loaded into NVivo software (version 12 for Mac) for qualitative analysis, allowing the researcher to identify nodes of interest, and to collate and identify common behaviours occurring throughout the projects life. Every document was scanned into NVivo where it was examined and tagged with topics. The process of doing this in NVivo is to “stripe” a passage of interest and “tag” that passage with a descriptor. This descriptor is referred to as a “node”. NVivo then highlights all the nodes in coloured stripes to allow easy identification of common topics. NVivo also provided the main repository for memos. Some documents were unable to be scanned into NVivo and these were analysed manually, with memo’s maintained.
using the same coding system as that used in NVivo. NVivo was used to code each document and to collate memo’s about what was observed.

The topics with references (links) back to their source documents was used to understand and to highlight common topics, and then to aid in collating topics into themes.

**STEP 3:**

The initial analysis utilised human interrogation (ie: the researcher) to document and capture themes, memos, and other information. One of the principles of inductive case study is for the researcher to set aside their own prejudices and experiences (Charmaz, 2008b, p.156). Being completely open is very difficult, therefore to ensure as far as possible that no bias was introduced during the previous analysis steps, all of the data (Appendix one and Appendix two) was converted into scanned text images and fed into an automated context analysis software, the Stanford Topic Modelling Toolbox (https://nlp.stanford.edu/software/tmt/tmt-0.4/). This software is based on Mallet (Machine Learning for Language) from the University of Massachusetts (http://mallet.cs.umass.edu). The purpose of utilising a software toolkit to undertake a secondary examination of the data is to perform independent analysis of the files that have a substantial textual component.

The Stanford Topic Modelling toolbox has the following features:

- Import and manipulate text;
- Train topic models (LDA, Labeled LDA, and PLDA new) to create summaries of the text;
- Select parameters (such as the number of topics) to sort the text;
• Generate rich-data outputs for tracking word usage across topics, time, and other groupings of data.

![Diagram](image)

**Figure 8: Stanford Topic Modelling network relationship diagram**

The Stanford Topic Modelling Toolbox was utilised as a secondary tool to provide ‘checks and balances’ against the researcher unduly influencing the outcomes based on their own experiences and biases.

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2 This image of the network diagram is for illustrative purposes only. Its inclusion here is to demonstrate the research method used for secondary confirmation of the findings. The use of the Stanford Topic Modelling Toolkit was not intended to replace the research which was undertaken, rather it was supplemental and was intended to ensure that the researcher had not lost objectivity with the sheer volume of source data which was analysed.
Using the Stanford Topic Modelling Toolbox, the ‘nodes and edges’ were mapped to an ‘adjacency matrix’ which allowed the resulting data to be fed into the Gephi software ([http://gephi.org](http://gephi.org)) to produce a series of network graphs for data visualisations. Using keywords by ‘rate of mention’ connections are made between these ‘key words’ and the source documents within which they appear.

**Figure 9: Network Diagram themes mapped to topics**

In total 50 topics were generated by the Stanford Topic Modelling Toolbox against 136 nodes. The fifty topics were then mapped back to the key themes identified from NVivo, referring to the source documents to ensure consistency. When ‘connected’ using the adjacency matrix there was a total of some 2.5 million (2,515,456) connections between the source documents and the key themes. This
exercise ensured that every keyword or key phrase mentioned through the source documents (Appendix one and Appendix two) was linked to a theme which had been identified in the first phase of the research. The automated text analysis provided a consistency check to the themes developed throughout the manual stages of research and investigation and provided a degree of confidence in the findings.

In the network relationship diagrams (figures 8 and 9), Witness Testimony and Project Documents are represented by the green dot, topics by the red dot and themes by the blue dot. The network relationship diagram could be examined for themes and topics, and to drill down into source documents.

**STEP 4:**

A series of short essays (attachment three) was published on the industry social network platform, Linkedin.com, between February 2016 and September 2016. These essays described the research and intermediate findings and sought comment and feedback. In total some two thousand two hundred and sixty-four reads were registered with sixty-two detailed comments, (several hundred referrals were also recorded where readers passed the essays along to their own networks).

The purpose of publishing essays on an industry social media site can be likened to prototyping of an IT solution. It allowed the researcher to obtain unfiltered feedback from the industry on ideas that were still forming. The publication and feedback is immediate, and may lead to fields of inquiry that would not otherwise have been considered.

Feedback on a social media platform has the potential to range wildly from vitriol to enthusiasm, however, the comments which were received were almost exclusively positive, and many provided additional information to research and added content to the findings. This method was used to ensure that the findings
would be aligned with the industry and would be of potential benefit in practice. This feedback led to further research and findings, and thus added to the emergent and circular nature of the research methodology.

**STEP 5:**

Step 5 is recursive. As themes emerge from the data (which were abstracted from the analysis of key words), theory is investigated to support the observations and to explain what was observed in the data. This recursive analysis; data -> theory -> data, continues until saturation has been achieved (Sbaraini et al., 2011).

### 3.6 Issues of Reliability and Validity

The two broad concepts of reliability and validity of measurement were developed in the context of quantitative research (Golafshani 2003), and have been ‘recast’ when applied to qualitative research (Charmaz 2008). Fundamentally, what is being measured by reliability and validity is the degree of error introduced into the research findings (Brink 1993,p.35). Brink (1993) argues that the very nature of qualitative research is that it is ‘subjective’, and results in ‘formal theory construction, through the researcher’s interpretation of results’ (Gasson 2004,p.81).

Quantitative research on the other hand is measured by formulae and metrics with explicit measures of reliability and validity that can be compared to other research findings (Charmaz 2006, Charmaz 2008, Charmaz 2008). No such metric exists in qualitative research, yet the concepts of reliability and validity can still be examined. In grounded theory the criteria of sound qualitative research is; validity of data, reliability of method and generalisability of analyses (Bong 2002,p.2).
The data and its collection were independent of the researcher and have been drawn directly from the project and from a Government led inquiry into the project. Witness Statements were taken under Oath by representatives of a Court.

The data collection was rigorous and extensive, with thousands of pages of material to be examined thus supporting ‘triangulation and sampling’ (Bong 2002). The large amount of data collected allows the researcher to minimise influences that might occur in a small data-set. The large volume of both project data and witness testimony ensures that bias has been removed from the source data, and that subsequent observations could be compared and contrasted across the multiple statements and project records providing, as far as possible, a balanced perspective to emerge.

Inductive case based research is increasingly being adopted in the field of Information Systems (IS) research (Sikolia, Biros et al. 2013), and four metrics have been proposed to ensure that IS research following a grounded theory approach is acceptable: credibility, transferability, dependability, and confirmability.

Credibility, claim Sikolia, Biros et al. (2013, p.4) ‘refers to how much the data collected accurately reflects the realities of the phenomenon’. The set of data underlying this research has been collected to a standard where those statements were legally binding and formed part of the record of a Government led commission of inquiry, with the ability to compel testimony under Oath. With more 181 witness statements examined, no individual witness testimony was able to influence findings and this therefore provides a solid and credible statement of what happened on the project being examined. The case study method of research provides results from real-world projects that would be difficult to obtain utilising any other method (Verner and Abdullah 2012). In attempting to determine why IT projects continue to fail in the real-world, the approach needed was to undertake a detailed case study. To understand why prior research had apparently not had
any impact on the success of IT projects it was imperative to set aside any preconceived theories and allow the data to inform the research. The credibility of this research and the results is derived from the method (case study) and the approach to data analysis, theory emergence and testing (grounded theory).

‘Transferability refers to the applicability of one set of findings to another setting’ (Sikolia, Biros et al., 2005). It is generally regarded that ‘the degree of generalisability or transferability is a direct function of the similarity between situations’ (Fifngeld-Connett 2006). In order to ensure transferability by the reader, it is incumbent upon the researcher to ‘provide sufficient detail of the context’ (Shenton 2004), to allow the researcher to infer whether or not the prevailing environment is similar enough to establish context. Chapter 4 in particular sets the context of the case study examined and Chapter 5 puts in context the findings. Effective transferability will depend upon the readers ability to relate these chapters to their own situation.

‘Dependability refers to the confirmation that the data represents the changing conditions of the phenomenon under study and should be consistent across time, researchers and analysis techniques’ (Sikolia, Biros et al., 2013, p. 3). While the results of a inductive case study rely upon the interpretation of the researcher (Gasson 2004,p.81) they may never be exactly the same as a peer’s. However, using the same techniques and tools it should be possible for the peer to reconstruct similar findings and how the researcher’s theories were derived. This is achieved by the researcher providing a detailed description of methods employed so that another researcher, if accessing the same data, would produce the same findings. As of the date of this thesis it does not appear that any other researcher has undertaken a similarly detailed analysis of the data generated by this project, and the commission of inquiry that followed. Another researcher may find other criteria in the data, but it would be this researchers observation that the
compelling nature of the data found in this examination would be exposed under any similarly detailed examination.

‘Confirmability tests the objectivity of the research’ (Sikolia, Biros et al 2013, p.3) and relies upon the ability of another researcher to examine the methods and work products to attest that the data was examined with reasonable objectivity. Objectivity was of significant concern to this researcher. The sheer volume of material being examined led to concerns by this researcher that they were at risk of being swamped by the data and would lose objectivity. In order to ensure that the findings were at least separable from the interpretations of the researcher, independent analysis was undertaken to verify confirmability by testing the research findings through the use of an independent text analysis software.

3.7 Summary

This chapter has outlined the research methodology used in this study - inductive case study informed by grounded theory. It further elaborates upon the data collection methods, and the methods employed to ensure the validity and reliability of the data and findings.

Inductive case study relies upon existing data sources, which in this research were the documents available as a result of a Commission of Inquiry (Chesterman 2013), established by the Queensland Government in Australia into the failure of the government’s Queensland Health Payroll Project and by additional requests for information, utilising a number of Freedom-of-Information (FOI) requests. The data was collected from 239 project files, and from witness statements of more than 116 persons involved in the project, totalling more than 5,000 pages of primary data.

3 in Queensland FoI requests are known as Right-to-Information
An inductive case study method was employed, and the data of the case was examined guided using a Grounded Theory approach. What makes this research grounded theory is that as the data was examined, it was tagged with codes directly extracted from the data being observed. These codes were then collated into categories and ultimately into themes as theory was explored to comprehend and make sense of those categories.

Ethics approval was not required for this research as it dealt exclusively with data that was in the public domain and previously published. However, ethics approval was sought for the publication of essays on social media and for the inclusion of commentary from those essays.

The next Chapter provides an overview of the case study at the heart of this research.
Chapter Four - The Case Study

In this chapter, the challenges facing the Queensland Health Payroll Project (the Project) and how they arose from the data and analyses are identified and discussed. The key themes that emerged are described.

The case study which is the basis of this research is the Queensland Health payroll project. Queensland is a state of Australia, located on the north-east coast. Queensland has a population approaching five million persons and covers an area of almost two million square-kilometres. The income for Queensland is agricultural, mining and tourism. The most famous tourist attraction is the Great Barrier Reef.

Queensland Health employs 65,000 persons, and has an operating budget of AUD$11 Billion annually. Queensland has more than two hundred hospitals and health care facilities.

4.1 Background to the QH Payroll Project

In 2002, the Queensland Government (Chesterman, 2013) decided to establish a ‘Shared Services Initiative’ (SSI) to provide IT services as a shared electronic payroll resource amongst most Queensland Government departments and other statutory government agencies. As part of this initiative the SSI undertook the management of the existing Lattice Payroll System in independent use by several departments, Queensland Health (QH) amongst them.

By 1st of July 2003 (Chesterman, 2013, p.10) the SSI was underway and was called CorpTech. In August 2005 CorpTech was granted A$125 million to build and operate a whole-of-government human resources and finance IT software solution. Multiple vendors were commissioned to implement the solution and support CorpTech; Accenture Australia Holdings Pty Ltd, (Accenture) with respect to human resource and payroll programs, and Logica CMG Pty Ltd (Logica), for the
delivery of finance solutions. There were smaller numbers of contractors, from SAP Australia and IBM Australia to build a integration between SAP ECC5 to WorkBrain for payroll (with Accenture) rostering and time and attendance recording. These multiple related system developments by different vendors were intended to be inter-operable with no discernible separation to the end user.

In March of 2006 QH had transferred responsibility for the maintenance of human resource software and hardware to CorpTech. At this time, the provision of a new computerised payroll system for its employees was thought to be urgent because the existing system, known as LATTICE, was nearing the end of its useful life (WS122, p.11).

By 2007, an independent review known as the ‘Kelliher Report’ (PD015) found that the new system was significantly behind schedule. At about the same time QH was advised by the vendor that support for the ageing Lattice System would cease in 2008.

A series of reviews and tenders were undertaken to determine a different approach built around the idea of a ‘Prime Contractor’. IBM subsequently won that tender and was awarded the contract, as Prime Contractor, to proceed in December 2007. ‘By October 2008 IBM had not achieved any of the contracted performance criteria; but it had been paid about $32 million of the contract price of $98 million; and it forecast that to complete what it had contracted to undertake would cost the State of Queensland $181 million. Accordingly the Shared Services Solution across the whole-of-government was abandoned and IBM’s contract was reduced in scope to providing a new payroll system for Queensland Health’. (Chesterman, 2013, p.12)

On 14th of March 2010 the system finally “went live” (operational) after ten failed prior attempts. The resulting system was reported to have 35,000 payroll
anomalies or processing errors (WS053) and consequently required 1,000 clerical staff to manually process fortnightly pays that otherwise was intended as the most basic core function of the new system.

After the “go live” was achieved, the Queensland Government was facing a total expenditure in the range of $1.2 billion for total cost of ownership of the immediate life of the project. The Executive Council of the Queensland Government ordered a Commission of Inquiry into the project on the 13th of December 2012.

The commission of inquiry has published an exhaustive list of transcripts, witness interviews and project documents (the list is provided at appendix two and appendix three, and the interview transcripts can be viewed online at www.healthpayrollinquiry.qld.gov.au). This archival material forms the primary data resource of this study. In addition, the researcher has requested and received by way of Freedom-of-Information requests from the Queensland Government thousands of pages of project documentation (appendix two) that were not available from the Royal Commission archives. The Terms of Reference that directed what Commission of Inquiry sought to understand were:

- the adequacy and integrity of the procurement, contract management, project management, governance and implementation process;

- whether any laws, contractual provisions, codes of conduct or other government standards may have been breached during the procurement and/or implementation process and who may be accountable;

- the contractual arrangements between the State of Queensland and IBM Australia Ltd, and why and to what extent the contract price for the Queensland Health payroll system increased over time;
any recommended changes to existing procurement, contract and project management (including governance) policies, processes, standards and contractual arrangements for major Queensland government information and communication technology projects initiated in the future to ensure the delivery of high quality and cost effective products and systems; and

any other matter relevant to this review

(Queensland Government Gazette, 2012)

The 36 summary points of the Commission of Inquiry (WS122, pp. 215-216) deal principally with matters of contract, negotiation and settlement. Errors of judgement and behaviour are highlighted in this summary, but it provides little information as to how the project became so encumbered or why it was unable to deliver the outcomes promised.

The Commissioner noted in his findings (Chesterman, 2013, p. 217):

‘I have identified two principal contributory factors of the inadequacies which led to the increase in contract price, the serious shortcomings in contract and project management, and in the State’s decision to settle with IBM. Those contributory factors were: unwarranted urgency and a lack of diligence on the part of State officials. That lack of diligence manifested itself in the poor decisions which those officials made in scoping the Interim Solution; in their governance of the Project; and in failing to hold IBM to account to deliver a functional payroll system.’

The Commission of Inquiry report (Chesterman, 2013) did not explicitly draw-out how the scope of the solution, governance and vendor management could have been undertaken in a manner which would have increased the likelihood of future project success, or how the learnings from this project and the

Situational Incompetence: an investigation into the causes of failure of a large-scale IT project
Darryl Carlton
inquiry might inform future IT undertakings beyond consideration of the procurement and contracting phases of the project.

4.2 The Players in the project

The Executive Director of CorpTech from its establishment was Mr Geoff Waite, until he took long service leave in July 2007, whereupon, the management of CorpTech passed to Ms Barbara Perrott (WS024, p.1). From February 2009 until August 2011 the Executive Director of CorpTech was Ms Margaret Berenyi (WS059, p. 2).

‘CorpTech delivered up to ten implementations in the period up to June 2007. CorpTech at that stage was delivering, but was behind schedule and over budget’ (WS024,p.4), but the Deputy-Secretary noted that ‘Geoff Waite and his team told me that they were unsure of the ‘way ahead’ and that they were concerned about the ability to continue with their systems implementations’ (WS026,p.3). CorpTech, as the shared services provider, had previously had a track record of successful completion of projects, but by their own admission they were concerned about the HR/Payroll solution which by June 2007 was having serious delivery problems, and was about to be separated from a Whole-of-Government implementation. CorpTech was a challenged and challenging environment in June of 2007 ahead of the appointment of a new Executive Director who would have responsibility for the Health Department HR and Payroll system. Into this unclear and confusing environment came a senior manager with no exposure to information systems projects.

In June of 2003, Barbara Perrott was appointed as Executive Director of one of the shared services functions of the Queensland Government. Ms Perrott was a long serving member of the Queensland public service with 40 years of service at her retirement in 2011. She had a Bachelors degree in Commerce
majoring in Human Resource Management and Industrial Relations. Ms Perrott had additional qualifications in Social Welfare (WS008, p.1). Following the resignation of the ‘Executive Director of CorpTech (April 2007) and the amalgamation of the PPO with CorpTech, (Ms Perrot) was invited to transfer to the position of ED CorpTech’ (WS008, p2). Mr. Bradley, the Deputy-Secretary agreed for Mr Waite to step down from CorpTech, and looked for a ‘suitable candidate from other Shared Services senior executives. Ms Perrot had strong experience in the Shared Services implementation, but she was not an IT expert’ (WS026, p.7).

Ms. Perrott was the executive in charge of the shared services (CorpTech) when the decision was taken to appoint IBM, through most of the project and just prior to the go-live. From early 2009 through to eventual go-live in March of 2010, directorship was the responsibility of Ms. Berenyi who was appointed as a replacement for Ms Perrot who was retiring from public service.

Ms. Berenyi has a Bachelor of Business (computing), a Masters’ Degree in Administration and a Masters’ Degree in Technology Management. Throughout her 30-year career in the Queensland Government she held a number of executive roles most of which involved management of information technology. She had commenced her career as a computer programmer in the State Government Insurance Office and had a strong, hands-on technical background to information technology.

The initial stages of the Queensland Health Payroll project were commenced while the State was pursuing a single solution for whole-of-government. Under the directorship of Mr Waite, some of the critical design choices were made during this period. The 2007 tender and contract phases of the project were managed under the directorship of Ms Perrott, who then had accountability through the majority of the programme of work. Whereas Mr Waite’s tenure covered the preceding phases of the project comprising and mostly
concerned the Whole-of-Government initiative, and not the Queensland Health project.

Ms. Perrott was the Executive in effective control of the payroll project. As the responsible executive she had ultimate accountability for governance and oversight, as her deposition to the Commission of Inquiry makes clear:

‘As Chair of the Evaluation Panel, my role involved over sighting the process from design to the signing of the Contract, ensuring that the probity of the procurement process was maintained, receiving regular briefings from Team Leads, attending information sessions from applicants as appropriate, and endorsement of the final recommendation’ (WS008,p.6). Ms. Perrott, as Chair of the Executive Panel was in charge of every aspect of the project.

Michael Kalimnios (WS065, WS066) has stated that his qualifications are a Bachelors Degree in Commerce, and membership of the Institute of Chartered Accountants and the Institute of Company Directors. He has stated that he was the ‘Chairman of the Project Steering Committee, and later the QHIC project board between 2007 until the termination of my employment in 2010’ (WS065, p.2). Kalimnios has further stated that ‘around mid-2006 I was given direct line responsibility for the Queensland Health Shared Services Provider’ which put him in a position where he was ‘more aware of the manner in which CorpTech interacted with IBM’ (WS065, p.3). The statements of Perrott and Kalimnios indicate that between them, these two individuals had effective control of the payroll project. Mr Kalimnios was with the project from its inception through to its conclusion.

Michael Lewis was the manager in charge of operations at the Queensland Shared Services (CSA), where he had been employed since 2009 (WS022 pp.2). Mr Lewis has stated that at this time he was one of three people in management and
was a peer to Ms Perrott. Mr Lewis has stated his qualifications as a Bachelor of Accounting. He has further stated that during the tender for the payroll project, he was the team lead for the governance evaluation team, reporting to Ms Perrott who was chair of the evaluation panel ‘as team lead for the governance section of the ITO, the team carried out an assessment of which of the tender submissions presented the best governance model in terms of how the project would be managed’ (WS022 pp5).

James Brown was the program director at CorpTech reporting to Ms Perrott. Mr Brown, while having no formal qualifications, had worked in IT since 1971 (WS027 pp.1). He states that his responsibility was for the ‘roll-out of the program of work by IBM across Government for HR and finance’ and that he also had ‘accountability for the Solution Design Authority whose principal purpose was, to ensure the IBM solution conformed to the Government’s preferred direction for it’ (WS027 pp2).

Terry Burns was an independent contractor on the payroll project, and was extensively involved in the tender and evaluation process. Prior to joining the project he had worked in South Africa, the UK and New Zealand. In South Africa he had been an employee of IBM, and in the UK and New Zealand had worked on several projects with IBM and SAP. Mr Burns was initially engaged as part of the Arena Consulting team to do a “snapshot review” of the shared services project (WS040 pp.8). Subsequent to this review Mr Burns was engaged directly by CorpTech and was part of a ‘triumverate with Mr Waite, Ms Perrott and me working out the terms of reference, agreeing, and then me setting up a daily briefing and weekly briefing back to Mr Waite and Ms Perrott’ (WS040 pp.11).

Arena Consulting was represented by their founder and managing director, Mr Gary Uhlmann (WS039) who states his qualifications and experience as having ‘worked for the Public Service Board between the years 1981 - 1985. While I was
in the Public Service Board I was given the task of computerising State stores which involved the replacement of a public service wide manual accounting machine based stores ordering system with a computerised system. The supplier (Sperry Pty Ltd) who won that bid offered me a job, so in 1985 I left the public service and worked in the IT industry for 10 years’ (WS039 pp1).

Legal services were provided to the Queensland Government by Mr John Swinson (WS014) of the law firm King & Wood Mallesons. In his statement to the commission Mr Swinson identified himself as being a partner of the firm since 1999, and had ‘carried out legal work for Queensland Treasury on a variety of information technology projects since at least 1998’ (WS014. pp2). He further stated that he had been involved in at least two contract negotiations between the State and IBM. The first in 2005 and then in 2007. It was during the second engagement, in 2007, that Mr Swinson ‘advised that the proposals received in response to the RFI were varied, vague on key elements and had many carve-outs, and could not be treated as offers capable of acceptance by the State’. (WS014 pp.6)

SAP, the German multi-national provider of HR and ERP Software, was represented on the payroll project by Mr Robert Pedler who at that time was the ‘Sales Management Leader for SAP in Queensland’ (WS061 pp.1).

For IBM, Mr Lochlan Bloomfield ran the consulting and systems integration arm called GBS (Global Business Services). Mr Bloomfield worked for Accenture for 16 years prior to joining IBM, and held degrees in electrical engineering and computer science (WS045 pp.1). IBM was also represented by Ms Cheryl Jensen who ‘focussed upon business development and product sales’ (WS064 pp.2). Mr Paul Hickey as Program Director and ‘was the IBM person responsible for the overall delivery of the SSSP. Later, as Project Director, I was responsible for managing the IBM team working on the delivery of an interim replacement for the Lattice payroll system used by Queensland Health. In this latter role, I reported to
Mr Doak, who took over from me as Program Director in a staged transition in June 2008’ (WS078 pp.1). In his statements to the Commission of Inquiry (WS078) Mr Hickey makes clear that even with the benefit of hindsight, he is of the opinion that he and IBM ran the project with a disciplined and proven approach ‘I had each IBM team develop a schedule based on all deliverables identified in each of the SOWs and these were used for reporting purposes’ (WS078 pp.4). Mr Doak took on responsibility for program management, and ‘was ultimately responsible for the overall management of the blended team made up of roughly 200 to 300 IBM employees, IBM contractors, CorpTech, Queensland Health and other government employees working on the SSP. I reported to Peter Munro, who was the head of Public Sector for IBM Australia’ (WS079 pp.2). Mr Doak maintained his position throughout his testimony to the Commission that IBM’s work was beyond reproach ‘The implementation of project management methodology was a matter for the Project Directors of each stream of work. Paul Hickey and John Gower managed the QHIC Project during the vast majority of my time as Program Director. They enjoyed my confidence in their management of the QHIC Project and I had no reason to doubt their implementation of IBM’s Ascendant project management methodology. IBM uses a proprietary version of the Ascendant methodology, which it has developed at significant cost and which is closely tied to IBM’s processes (WS079 pp.14). In an extraordinary statement, Mr Doak states ‘I was not at the time, and have never since been made aware of any system error, defect or work-around, whether identified before or after go-live, which was responsible for any significant number of persons being incorrectly paid’ (WS079 pp.17).

Mr Doak’s comments are in stark contrast to the observations of the Commissioner ‘On 14 March 2010 after ten aborted attempts to deliver the new payroll system, it “went live”. It was a catastrophic failure as all Queenslanders know. The system did not perform adequately with terrible consequences for the employees of QH and equally serious financial consequences for the State. After
many months of anguished activity during which employees of QH endured hardship and uncertainty, a functioning payroll system was developed, but it is very costly. It required about 1,000 employees to process data in order to deliver fortnightly pays. It is estimated that it will cost about $1.2B over the next eight years (WS122 para 2.14). Newspapers reported that ‘thousands of health workers being underpaid, overpaid or not paid at all’ (brisbanetimes.com.au 2013)

4.3 Timeline of Events

The Queensland Health Payroll Project had its foundations in another project by the Queensland State Government - the creation of a shared service initiative (SSI). The SSI was a business unit of Queensland Treasury and was named CorpTech. The idea behind the SSI was that all of the administration and back-office services required by each Department could be more efficiently undertaken by a single agency. The following services are potentially shared services within scope of the SSI (http://qld.gov.au) provided to Queensland Government agencies and statutory authorities:

1. finance,
2. procurement,
3. human resources management,
4. telecommunications,
5. mail support.

‘QSS (Queensland Support Services) is also responsible for the management and support of the majority of the sector’s finance and human resource systems and processes’ (http://qld.gov.au). The name QSS replaced the name SSI. At the time of the payroll project the name for the shared service of the Queensland Government was SSI.
With this as the foundation, it was the charter of the shared services to deliver a human resources and payroll capability to several government departments, including the Departments of Education and Health.

In about 2005, the SSI commenced work on implementing a universal payroll solution for all Queensland Government Departments and agencies, starting with the largest two, the Department of Education and the Department of Health. ‘After the whole-of-government decision around 2005 to implement (software from) SAP (corporation), Queensland Treasury decided that they were going to be the systems implementation lead’ (WS032, p.3). Accenture, as an external party, were engaged on a time and materials basis to provide resources to this SSI project (WS032).

By mid-2007, there were multiple parties involved in providing resources to the whole-of-government project, including Accenture, IBM and Logica. By March of 2007, it had become apparent to senior Department officers that the SSI was facing significant challenges. The Service Delivery and Performance Commission had reported (WS122) that organisational change was necessary as the project was behind schedule and over budget. The under-Treasurer’ of the Department commissioned a review to identify potential courses of action’ (WS122, p.11). The report was delivered to the Department on the 18th of April 2007. What evolved from this was the idea of engaging a ‘Prime Contractor’ that would take responsibility for the ongoing project. Subsequently a Request for Information (RFI) was issued on the 2nd of July 2007, with initial responses received by the 12th of July 2007. Of the ten companies invited to respond only four did so: IBM, Logica, Accenture and SAP.

A more detailed Request for Proposal (RFP) was sent to these four companies on the 25th of July 2007. An Invitation to Offer (ITO) was issued on 12th
of September 2007. Responses were received from IBM, Logica and Accenture. SAP had withdrawn from the procurement process.

IBM was the successful tenderer and a contract was entered into on the 5th of December 2007. The Queensland Health payroll project was seen as the priority, and the 5th of December contract between IBM and the State Government included a ‘fixed contract’ to be completed by 31st of July 2008 at a cost of A$6.194 million.

By October 2008 (three years after the anticipated completion date) it was reported that ‘IBM had not achieved any of the contracted performance criteria’ (WS122, p. 12). By this stage IBM had been paid A$32 million of a revised A$98 million contract and was forecasting completion would cost A$181 million (WS122, p.12). The A$6.194 million dollar contract that had been entered into less than one year previously had now grown in magnitude to an estimated A$181 million.

On the 14th of March 2010 ‘after ten aborted attempts to deliver the new payroll system it went live’ (WS122, p.12). The project, originally scheduled for completion on the 31st of July 2008, was now two years late.

The ‘go-live’ was ‘catastrophic’ (WS122,p.12), requiring 1,000 additional manual staff to enter pay adjustments. The project costs by this time had been estimated at $1.2 billion over the next 8 years of operation. On the next page, Figure 10, is a timeline of the project and major events throughout its life. In an ideal world this reconstruction might have highlighted an ‘inflection point’ – the point at which this project ‘went off the rails’. No such inflection was observed. Errors and problems appeared to commence immediately. One might cynically suggest that the project was never ‘on the rails’ in the first instance, and this is why there was no observable event that tipped the project into a failure state.
Figure 10: Project Timeline
4.4 Chaos in the Queensland Government

With the failure of the Whole-of-Government HR and payroll solution, the unanticipated end-of-life of the LATTICE system, and the clearly identified failings of the Queensland Health payroll project it would seem that the Queensland State Government did not have a consistent IT plan for HR, payroll, rostering and recruitment. Different technologies were being deployed across different Departments at the same time, utilising the services of multiple vendors. Some vendors were operating as parts of a single project (on occasion), independently on other projects, and competing against each other for additional business. The overall environment appears to have been chaotic.

CorpTech initially went to market ‘to seek products which could be delivered across Government and meet government-wide needs for HR and Payroll’ (WS024, p.2). IBM was awarded the contract after proposing a ‘consortium of products - SAP was used as the core, and included WorkBrain for rostering arrangements, Recruit ASP for recruitment solutions and SABA for knowledge management’ (WS024, p.3)

The contract with IBM was ‘preceded by a tender process which took about six months. As part of another tender process, the Implementation Partners for Human Resources/Payroll appointed was Accenture. Accenture was the implementation partner used, in conjunction with the CorpTech team, to roll out the HR/Payroll solution in the then Department of Housing’ (WS024, p.3).

Prior to the commencement of the Queensland Health payroll project there are what appear to be conflicting projects awarded to different vendors. One contract, to IBM, to implement four software products to provide a statewide HR and Payroll solution, and a second contract, awarded to Accenture, to implement HR and Payroll for the Department of Housing.
The IBM proposal (WS024) included four solution components: SAP ECC5, Recruit ASP, Workbrain and SABA. From the witness statements it is apparent that contention arose as to the transparency and appropriateness of the selection process for these products. For example, Mr Waite, the head of the government agency tasked with implementing these solutions, stated that ‘to the best of my recollection, no choice about WorkBrain had been made by the State before the November 2005 contract’ (WS024, p.3). In the memorandum (PD010) dated 28th May 2007, it was noted that Workbrain was going to be implemented in 2008 as the replacement rostering solution. It is therefore clear that the intended use of WorkBrain predates the IBM proposal and ultimate contract in December 2007.

The choice of solutions architecture for the Queensland Health Payroll project does not appear to have been determined with consideration of the business or technical needs to the Department. According KPMG (2012), ‘as of 2005, the Whole-of-Government system for payroll had been identified as SAP ECC5 and Workbrain. As a result, it was decided that QH would replace the Lattice/ESP system with SAP ECC5/Workbrain as part of the Whole-of-Government Shared Services Initiative (KPMG, 2012)’. Other eyewitness accounts placed the decision to adopt a combination of SAP ECC5 and Workbrain at a much later date (during the 2007 proposals and presentations). ‘The presentation provided by IBM indicated that the Workbrain system would become the award interpreter (in lieu of SAP) …. the presentation was potentially a game changer’ (WS017, p.1). The issue of product selection would become a significant issue as the project progressed. Integration between SAP and WorkBrain became a significant constraint on the project (WS122, p.155). As these two accounts indicate, even on what should have been a clear and uncontroversial issue; who made the choice of products and when that decision was made is open to many interpretations. One that does not seem to have been resolved by the end of the Commission of Inquiry,
but one that will become important as this researcher investigates identifiable contributory factors of project failure.

Towards the end of 2008 the ‘IBM team, working in collaboration with the CorpTech Enterprise Architect, obtained and reviewed the documentation for relevance to clarifying the business drivers underpinning the SSI’ (PD063, p.7). This document, created more than one year after the commencement of the project, appears to be the first and only document to address the business drivers and explicit requirements of the project. As has been discussed in Chapter Three, no project can be successful without a clear plan (Jones 2004), and this project does not appear to have a plan, it does not appear to have a solutions design, or an architecture, and the product selection appears to be completely arbitrary.

Annexure 6 (PD014) to the 2007 invitation to offer, which was reported as forming part of the contract (WS012), is shown below (Figure 11). Of significance in this Gantt chart is that the period from October 2007 to April 2008 is time boxed as ‘Initial Statement of Work’, a deliverable that was never completed to form part of the contract. The Initial Statement of Work was a contracted deliverable. The Initial Statement of Work sets out what was expected to be delivered. Without this document there is no clear definition of what work will be done, how that work will be tested or measured, and no timeframe against which the vendor can be held to account. Without this document the senior management of the project, with responsibility for the projects outcomes, have no possible mechanism to oversee the project, monitor progress, report variance, provide checks and balances. This is the most basic of project requirements and it was not done.
At the point of issuing the invitation to offer, having already been to market with a request for information and a request for proposal, the Queensland Health/CorpTech team did not have an ‘Initial Statement of Work’! The Government sought (Chesterman, 2013, p.58, WS043), and the vendors responded with, fixed price commitments to a project that was devoid of even the most basic of project components, a statement of requirements. In essence, IBM had agreed to undertake a project, at a fixed price, for which no statement of work existed and no detailed planning of any description had been undertaken.

Three ‘go-to-market’ phases had been undertaken and the vendors were bidding aggressively to be awarded the contract (WS032). However, no design or clear statement of requirements existed, as discussed above. Nor were they planned to come into existence for another four months according to the ‘Initial Statement of Work’ displayed in Annexure 6 (Figure 11 above).
While no explicit business case appears to exist for the project, and none could be sourced either from the Witness Statements or via Freedom of Information Requests, various memoranda (WS120, WS118, WS116, WS107, WS104) collectively cite various rationales that could be retrospectively viewed as business case-like rationales, such as the risks facing the existing LATTICE system, and the need to replace it (PD010). In May of 2007, the Manager of HR Operations wrote to the Executive Director of Queensland Health Shared Services (PD010, pp.1-6) to outline these risks and make recommendation as to what actions should be pursued. The overriding reasons stated in this communication for a replacement of the LATTICE system with the new SAP/Workbrain solution was the ‘prohibitive costs of maintaining the LATTICE system and its cessation of support in June 2008’ (WS122.p61). In essence then, the business case for the new system was that the old system was about to lose its maintenance and support from the vendor. No evidence has been sighted to suggest that any greater understanding of costs and benefits was undertaken before the contract was awarded to IBM for what became a one billion dollar disaster.

The solutions design and architecture appears to have been set by some sort of default when the tender responses confirmed the solutions architecture. The time scale was set by virtue of a fixed price quote for work to be completed by the 30th of July 2008, but the tasks and activities were unknown when the contract was signed. The winning tenderer had committed to meet the time and budget using the products preferred by the Queensland Government (Chesterman, 2013. p.34). Mr. Salouk of Accenture responded that he ‘observed that price and scheduling were key drivers in the decision to award the tender to IBM’ (WS032, p.15). Commenting further, Mr Salouk could not ‘determine what price IBM was suggesting in terms of the fixed price or the total expected price’ (WS032, p.22). Accenture had proposed an initial scope of work and pricing much more in line with IBM’s amend quotation some months later of A$180 million. In meetings with
senior Department executives Accenture made it clear that they thought IBM’s price would escalate dramatically once they understood the scope of work required (WS032).

The externally engaged legal firm Mallesons Stephen Jacques (WS014), in preparing their advice with respect to each of the proposals from Accenture, IBM and Logica, stated that ‘we believe on balance that IBM’s Offer gives rise to a greater number of material issues and less thought has gone into IBM’s Offer regarding contractual mechanisms that will assist the customer or enhance the working relationship between the parties’ (WS014, p. 39). This shows further evidence that the experts engaged by the Department were highlighting the risks of the IBM proposal, but these concerns were being ignored.

At this stage of the Queensland Health Payroll project, the Queensland Government had accepted a contract to implement an IT project to a business problems for which no business case existed and no technical solutions architecture had been provided. The IT project was shown by the evidence tabled at the Commission (Chesterman, 2013) and by the analysis of documents, to be a solution to to fulfil an unknown set of requirements for a fixed price and timescale, and oddly one already in government use on an existing challenged project. Furthermore, senior management was acting against the advice of their technical experts (WS085) and external legal advisors (WS014).

4.5 Themes to Emerge from the Data

Source documents were annotated with codes, either using NVivo or manually depending upon the quality of the digitised versions of the documents, as described in Chapter 3. The initial set of codification produced topics, which were then collated into themes. This process was undertaken in two passes. The initial pass was by the researcher and used both NVivo and manual coding
methods. The second pass was to utilise a topic modelling software that could read the digitised text and extract topics. The computerised modelling was used as a check to ensure that the researcher had not become so immersed in the data that he was “unable to see the wood for the trees”. Fifty topics were collated from more thousands of data points and annotations. These were then raised to identify themes.

The first theme to emerge from the data was the lack of apparent domain expertise. This was mentioned in many of the witness statements and correlated to almost all of the key topics.

The second theme identified was that the various parties to the project were in conflict, almost from the beginning, and exhibited motives which at best could be described as ‘tangential’ to the success of the project.

The final theme that recurs and aggregates many topics was the issue of accountability for actions and decisions.

**Figure 12: data collection**

These three themes emerged strongly from the data, but upon investigation they failed to answer one important and fundamental question - why.
Why was there a lack of senior executive competence when it came to IT projects. It could not be conceivable that the Government would deliberately undermine the performance of the project by appointing individuals that lacked domain expertise, that encouraged conflict between stakeholders both internal and external, that deliberately ignored warnings from their own team, and failed to hold vendors and staff accountable for their actions.

From the research, what emerged was the notion of ‘Normalisation of Deviance’ (Vaughan, 2016) as a unifying theme to bind together the three key contributory factors of project failure – in other words the conditions that led to this specific instance of project failure grew over time based upon an accumulation of previous decisions - “poor management” was the norm and it had not only become expected, it was “business-as-usual”. Poor management of IT projects had been allowed to become “business-as-usual” because abject failure had not been perceived to previously occur, and specific competence in IT project delivery was not seen as a requirement for running IT projects.

### 4.5.1 A Lack of Apparent Domain Expertise

In 2009, Ms. Perrott handed over the role of Executive Director to Ms Berenyi who immediately undertook a stocktake of the current state of the project and made several observations (WS085):

- IBM was engaged as Contractor to the State with the responsibility to direct, manage and control defined work packages;
- CorpTech had primary responsibility to manage the contract on behalf of the State;
- a decision had been made which redefined the scope of work for IBM and their subsequent obligations under the contract. Specifically that
IBM would be responsible for the delivery of the Queensland Health LATTICE replacement project;

1. the contract obliged IBM to perform the following work (WS085,p.6)

1.1. Statement of Work (SoW7) LATTICE’ Interim Solution Scoping and Planning,

1.2. Statement of Work (SoW8A) LATTICE Replacement Design, Implement and Deploy,

1.3. Statement of Work (SoW8) LATTICE Replacement Design, Implement and Deploy Version 2.0 (updated version);

Ms. Berenyi was taking control, identifying the obligations that the vendor were accountable for, and had ‘formed the view that the governance arrangements for the Project were not working effectively’ (WS085, p. 10) and set about making changes.

Those changes included:

- The QHIC Implementation Steering Committee was the ‘pinnacle governance body for the project established by QH from February 2008 to oversee the Project, did not have adequate representation’ (WS085, p.11), and

- The Board as it was operating at the time ‘did not conform to the Government’s project management methodology’ (WS085,p.11).

A new Board was established in April 2009. The various Boards operating across the project had a significant level of overlap, as can be seen by Figure 13 below. This resulted in the committees writing memos to other committees of which many members were the same. For example, a Briefing Note in 2008 (PD086) was sent from the QHIC Project Board to the QHIC Project Directorate.
Five members of the Project Board (more than half the full complement of eight) were also represented on the Project Directorate that were receiving the memorandum.

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Figure 13 - The Governance Boards of the Payroll Project

Governance and Oversight of the project was ineffective, and extremely top-heavy. Furthermore, it is unclear how the functions of the Project Board differed from those of the Project Directorate.

Governance was unnecessarily complicated and convoluted. These arrangements can only have contributed to confusion and miscommunication and delays in obtaining decisions and approvals.

According to the Contract and the Agreement between IBM and the State Government the principal role of CorpTech was to manage the contract (WS014). Mr Bird was recruited into CorpTech in March 2008 with the responsibility to manage the contract on behalf of CorpTech acting for the Queensland Government.

Mr Bird remained with the project until July 2010. He was a lawyer, with additional qualifications and experience in public sector administration, as well as in computer programming. He earned a Masters in IT from Queensland University of Technology. Mr. Bird’s qualifications and experience made him an ideal
candidate for the role of contract manager. His training as a computer programmer meant that he was familiar with the technical tasks being performed, and his legal training allowed him effective oversight of the contracts and legal agreements that existed between the various parties.

Commencing work in late March 2008, Mr Bird notes in evidence to the Commission that the 2007 contract with IBM was ‘an agreement to agree’ (WS012, p. 3) and that key statements of work had not been developed or agreed; that the scope was missing, and ‘critical terms relating to the Prime Contractor role’ were yet to be agreed. The contract, the instrument that provides the client with the ability to manage the project and vendor, was in essence incomplete and lacking key components for more than one year after the commencement of the project (WS012).

It was the view of the Contract Manager (Mr Bird) that IBM was ‘in default of the contract early on’ (WS012, p.4) and ‘a large number of contract deliverables were late and of poor quality’ as determined by the Solutions Design Authority (SDA). The SDA was set up with a process involving IBM submitting a piece of work to the SDA for approval, and, if rejected, to be resubmitted according to the timeframe set down by the process and the manner set down by the process. ‘The acceptance process prescribed in the contract gave SDA five days after IBM’s submission to review the deliverables and either accept or reject the deliverable’ (WS012, p. 4). IBM’s contract non-compliance (or non-complaince with agreed SDA process) was further illustrated by an independent testing and quality review which was conducted by KJ Ross & Associates (PD103) where the independent audit found that approximately 30% of all work submitted by IBM was failing User Acceptance Testing (UAT) (PD013, p.3).
The KJ Ross audit (PD103) found that:

- non-functional requirements were not adequately defined;
- the exit criteria did not define the criteria for determining outstanding defect priority;
- test objectives and pass/fail criteria were not stated in measurable terms;
- there was insufficient test rigour around payroll performance validation and parallel payroll testing.

The CorpTech contract management team attempted to hold IBM to the contract, despite its deficiencies. IBM responded by bypassing the Contract Management group and went directly to the Director-General of the Department, and demanded the removal of ‘problematic employees’ performing the Contract Management function on behalf of the Queensland Government. The Director-General then directed Ms Perrott to remove personnel from the contract management team (WS012,p.6). This turn of events is staggering, and almost beyond belief. The vendor, IBM, had committed to a project that had no specification, scope or terms of reference. They had committed to deliver a working product in a fixed time. Their first deliverable on this journey was, according to the contract, the creation of a Statement of Work. When IBM failed to deliver this statement of work, or any other contracted component of the project, the Queensland Governments contract management team attempted to hold the vendor to account only to have senior management of the Department agree with the vendor to remove these personnel from the project. At this very early stage of the project it would appear that the Governance arrangements, including the involvement of senior executives, is functioning in a counter-productive fashion to undermine internal project controls at the behest of a vendor which appears to be demanding complete autonomy. It is unfathomable what the
thinking of the Steering Committee or the Departments senior executives was at this time. There is no precedent for a client abdicating all responsibility and acquiescing to the whims and demands of a vendor in this fashion, and still having a reasonable expectation of delivery of a project outcome within time, budget and scope.

The capitulation to IBM continued, and by the end of December 2008, the change requests being submitted by IBM for approval (and which were accepted) ‘effectively rewrote history by amending past agreed scope’ (WS012,p.10), and it was determined that IBM were working to ‘a technical and functional specification that Queensland Health had never agreed to or signed off’ (WS012,p.10).

The evidence of the witness statements cited above show that governance and oversight of this project was not just ineffective, it had been effectively abandoned. A contract had been let for an unspecified outcome at a fixed price (WS012,p.4). The first deliverable was a scoping document (Figure 11), which after eighteen months had not been delivered and subsequently did not form part of the contractual terms (WS018). Without an agreed scope and without agreed accountabilities assigned to the vendor, the Steering Committee governance and oversight effectiveness was reduced as it had no point of reference for determining if the work was being done as agreed and within the agreed timeframe. The Governance structures both from CorpTech and from Queensland Health appear to be completely unaware of their responsibilities in ensuring this project is delivered. In addition ‘Queensland Health didn’t have a program management office to provide assistance or advice’ (WS018, p. 2). This meant that the management of the project was reliant upon IBM to provide them with project performance updates and reports. In the best case governance and project oversight was absent on this project, allowing the vendor to control all aspects of the project activities without any oversight.
4.5.2 Parties in Conflict Throughout the Project

The relationship between CorpTech/Queensland Health and IBM has been described as having ‘tension between IBM and QH in terms of the Project Directorate governance’ (WS059, p.12). Ms Perrott observed that as the Executive Director she was ‘frequently called upon to mediate situations between QH/IBM/CorpTech’ and this was especially prevalent ‘where IBM may have been suggesting a particular design feature and the Department or CorpTech may have had different views’ (WS008, p.13). As has been discussed in the previous section, the vendor (IBM) was accorded unfathomable discretion and authority over the project, and even over the Governments own personnel. The Executive Director of the project, an individual who was appointed to role despite her lack of information technology experience (WS008), appears to treat “design differences” as personality clashes that require mediation. Again, as has been noted in the previous discussion, most of these differences appear to have been resolved in IBM’s favour even if that meant IBM appealing to the senior leadership of the Department to have “problematic” personnel removed from the project.

In early 2008, IBM had tendered its best pricing, which included a ‘figure not to be exceeded’ (WS122, p.77). This initial stage of work was to complete the scoping exercise and to undertake detailed planning (WS027, p.1). Negotiations for this work were not completed until November 2008, by which time ‘IBM’s proposal suggested a set of additional services equating to an additional $28 million which it (IBM) considered to be outside its contracted scope’ (WS027, p1). The cost of the ‘revised proposal was in the order of between $35 million and $80 million greater than that proposed by IBM in its original tender response’ (WS051, p.3). There is little evidence of IBM demonstrating any commitment to their proposal or initial plan of work. The proposal at this stage is little more than a
promise that allowed IBM to secure a contract with the Government which could be exploited.

Mr Brown, a CorpTech employee in the role of Program Director observed (WS027, p.3) that Mr Doak of IBM was of the opinion that ‘if the program could demonstrate significant benefit to the State (i.e. cost savings) that the Government would provide additional funding’. IBM was demonstrating contempt for their initial proposal from the earliest stages of the project, and appear to be treating this project as a bottomless pit from which they can draw at will. There would appear to be an underlying strategy of avoidance of contracted performance delivery and vendor initiated leverage to create scope-creep which was facilitated by compliant senior management of the Department.

Several participants expressed their concern that IBM was more focused on maximizing income for itself than on delivering and completing the project (WS012, WS021, WS030). The lack of effective project governance and contract management, as demonstrated by the evidence of the witness statements, provided by its absence (of effectiveness), seems to encourage a strategy that may explain IBM’s behaviour and the evidence provided about it. This lack of effective control by the Department allowed IBM to apply influence to reduce their accountability to deliver and to both increase their income but reduce their expenditure on delivery and hence the potential profitability.

When QH and CorpTech personnel raised concerns about IBM’s performance, and about their contract compliance, IBM responded aggressively to those concerns. On at least one occasion, a representative of IBM stated ‘Do not tell us how to deliver this. This is a fixed price, guaranteed result. We will do it however we see fit. It is not up to the customer to tell us how to do it’ (WS013, p. 12).
As they had done before, rather than implement Contract Management–related directions, and potentially to reduce their project expenditure to implement those directions, instead, IBM escalated issues about project personnel to senior executives in Queensland Health. ‘IBM had prepared a list of people that they didn’t want on the project … apparently anyone who had put up any objection to what IBM were doing or raised any issues, their name was on that list’ (WS013, p. 13). The witness statements provide evidence that instead of rectifying or addressing what the client perceived as project performance deficits brought to their attention, IBM sought to silence those critics, and senior Departmental executives appear to be willing to take any measure to mollify IBM.

By way of further illustration of IBM’s approach to expenditure reduction, the CorpTech Procurement Manager (WS012) observed that ‘around late 2009 and early 2010 … IBM tried to vary the terms in the Contract so that the milestone could be accepted with severity 2 defects. The contract deliverable acceptance criteria required that there were no severity one’s and two’s, but a management plan for severity three’s and four’s’ (WS012, p. 14). During user acceptance testing (UAT) the QH team ‘detected 1,700 errors’ and ‘forty percent of the system functionality had not been tested’ (WS013, p. 15). This amendment would allow IBM to avoid contractual accountability for the most severe error in the system.

The CorpTech contract management team attempted to hold IBM to the contract, despite its deficiencies. IBM responded by going to the Director-General of the Department and demanding the removal of ‘problematic employees’. The Director-General then advised the Executive Director to remove personnel from the contract management team (WS012, p. 6), and was illustrated by several witness statements in evidence to the Commission of Inquiry: ‘IBM had prepared a list of people that they didn’t want on the project … apparently anyone who had
put up any objection to what IBM were doing or raised any issues, their name was on that list’ (WS013, p. 13).

The evidence found in this investigation showed that Keil and Mahring’s “mum effect” (2010) was occurring on the Queensland Health Payroll project. A possible reason for why the “mum effect” is allowed to operate on a project is what Vaughan (2016) describes as the ‘Normalisation of Deviance’. It was found that in the case of Queensland Health the project executive saw the role as “managing conflicts” rather than managing the project.

It would appear, based on the witness statements and findings of the Commission of Inquiry that IBM’s actions were motivated by an attempt to avoid accountability, to obtain additional funding, and to gain the support of the Departments’ senior executives in doing so. No effective vendor management can be seen to be undertaken by the various witness statements. Vaughan (2016), observed on the NASA Challenger disaster that ‘the decision was not explained by amoral, calculating managers who violated rules in pursuit of organisational goals, but was a mistake based on conformity - conformity to cultural beliefs, organisational rules and norms, and NASA’s bureaucratic, political and technical culture’ (ch.1). In discounting amoral behaviour, this researcher prefers an explanation for these observed behaviours as being consistent with what Vaughan observed at NASA. The culture of the Department was to support the vendor. It was IBM after all that were the experts and were being paid to do a job. The ‘normalisation of deviance’ (Vaughan, 2016) on display at Queensland Health was driven by the belief that no previous IT project had been a disaster by allowing the vendor the freedom to do their job, so it was not anticipated that a disaster would befall this project either.
4.5.3 Accountability of the Parties

The main difference between the IBM contract of 2005 for a whole-of-government solution and the 2007 contract for Queensland Health alone, was that in 2007 IBM was retained as the prime contractor (WS014, p.1), with greater authority and control. IBM was calling the shots on this new arrangement.

As was discussed in Chapter 4.3 (above) the technical architecture that appeared in the proposal from IBM was a carry-over from the Whole-of-Government project (which had floundered), and was not specifically considered for the Queensland Health project. The two final proposals, one from IBM and one from Accenture, had a divergence with respect to the technical solution. A critical component of the payroll solution was how the pay awards would be calculated for each individual each pay period. An “awards engine” was required to translate the hours worked and compare those to award pay schedules for input into the payroll system. Accenture proposed SAP as the awards engine, where this functionality would be processed within this one package. IBM, on the other hand, adopted the alternative approach of processing the awards data external to SAP utilising the WorkBrain solution that the Queensland Government had previously committed to for the whole of government solution (WS014,p.11), but which had not yet been successfully integrated into an overall SAP payroll solution. IBM was introducing an unproven technology into the mix, introducing an additional element of risk for the project.

It was perceived by Queensland Health that the use of WorkBrain to process awards was ‘a breakthrough’ and a ‘game changer’ that would allow the project to be implemented much faster than using SAP (WS017, p. 7). This perspective seemed to be important to the decision making process about the adoption. However, the witness statements suggest that no evidence was ever provided to show that the perception of QH was valid. This was also shown by
another witness where IBM had failed to demonstrate a working solution or to meet the performance criteria expected of the system (WS014, p. 17) in respect of awards information processing.

Despite both SAP and WorkBrain being off-the-shelf or packaged solutions a significant number of ‘customisations were made to both WorkBrain (1,029) and SAP (1,507) to tailor them to QH’s requirement and context’ (WS003, p. 14).

Given the large number of customisation changes that these pre-designed packages were going through, in addition to a potentially foreseeable new award needing to be implemented arising from the Enterprise Bargaining Agreement, management of change was ‘a key governance requirement of the Contract’ (WS008, p. 10). ‘There were several layers of multi-agency committees that managed various aspects of the program. Committees to manage change request decisions, scope, solution design, budget, resourcing to name but a few’ (WS008, p. 10). These kinds of changes were explicitly (WS012) within the scope of the project and potential vendors would have been expected to have budgeted for contingency to cover their implementation in the agreed contract price.

Prior to signing a change request, the project Director, Ms. Perrott, ‘would be briefed by CorpTech officers regarding the reasons for the Change Request, the consequences of agreeing to the change and other relevant matters. The officers briefing me were in my view competent and had a thorough working knowledge of the Contract and the Project as well as the circumstances surrounding the change’ (WS008, p. 6). These statements appear to be in contrast to the Executive Directors comments that she was often called upon to mediate between CorpTech and IBM ‘especially on technical matters’ (WS008,p.13), and at odds with the actions taken to remove QH personnel that had responsibility for the oversight and enforcement of the contract (WS012. p.6)
In addition to the conflict that existed between the Queensland Government agencies involved in the project and IBM, there was conflict between the agencies themselves. In one email ‘Queensland Health was complaining that there’s some lawyer down at CorpTech killing our project. He’s refusing to sign change requests’ (WS012, p. 12). According to the witness statement (WS012), the lawyer in question was attempting to hold IBM accountable to the project, but the ‘customer’ (Queensland Health) just wanted the project delivered - at any cost it would seem.

The urgency for timely project completion was something of a recurring theme in the witness statements, where in one instance a staff member ‘grabbed it off the printer, ran down to the Hilton (hotel) and had Barbara (Perrott) sign it off’ (WS008, p. 13) thereby bypassing all process, and failing to seek the advice of the professional staff at CorpTech.

CorpTech staff continued to raise concerns about the manner in which the process was being run, in particular the approach to the change requests. One individual stated to their manager that ‘if you keep going the way you are going, you’re going to spend hundreds of millions on this thing’ (WS013, p.3). The stress of ‘fighting a losing battle’ forced more than one state government employee to seek medical advice and take extended leave (WS013, p.4).

In relation to the contract, when IBM started work the document ‘Statement of Work 7 (was) to define the scope of Queensland Health Implementation of Continuity’ (WS013, p.9) for which IBM would be paid as having achieved a contracted deliverable. Despite IBM drafting the Scope of Work that included the requirements of the project ‘IBM had put together a change request because, supposedly, there had been a change in approach on how to do the HR financial integration’ (WS013, p.10). To be clear, IBM drafted the statement of work.
and was paid to do so. IBM then raised a change request because that statement of work did not reflect the work that needed to be undertaken.

In 2005, when the project was still being conducted as a Whole-of-Government solution, an independent review (WS039) was undertaken by Arena Consulting Pty Ltd at the request of the Executive Director of CorpTech (WS039, p.4) and their findings at that time indicated (WS039, p.4):

- slippage was appearing in sub-projects;
- a harder-edged project management approach was needed especially on timelines and deliverables;
- there was a lack of integrated project planning;
- there was no integrated critical path with clear timelines and deliverables;
- there was a lack of clarity about the role of some governance committees;
- there was a lack of single project accountability.

There can be no doubt that senior management across the various state government agencies involved in both the Whole-of-Government payroll project and the subsequent Queensland Health project were well aware and fully informed of project management problems, and were apprised of the actions required to mitigate these. In 2007 the same consulting firm was engaged (WS039, p.7) to conduct a follow-up review, and found that these same issues persisted from the whole-of-government project through to the Queensland Health Project. As the project progressed ‘IBM struggled to produce the agreed deliverables’ and then
withdrawing them when it was demonstrated that the deliverables were substantially lacking (WS041, p.6).

When technical and performance issues arose on the project ‘Ms Perrott’s response was to suggest she facilitate a meeting’ (WS041, p.8) between the parties but the ‘problem was not one of an issue between (individuals) (as) it was that functions were not being performed’.

No matter how bad project performance became, it appeared that the State Government had no interest in terminating the contract with IBM or of holding them accountable for their performance (WS041, WS012). This lack of accountability empowered IBM to continue working in their existing manner. ‘It proved impossible to sight a useful schedule that IBM was using for the work which it was undertaking for Queensland Health’ (WS041, p.14). When pressed to perform IBM continued to refer to senior executives of the Department and demand concessions or that individuals be removed.

In their defence to criticism at the Commission IBM characterised the project as a ‘like for like replacement’ from the old LATTICE system (WS079, p.3). However, the number of change requests suggests that this was not the case with significant additional functionality and integrations being performed. Also, the absence of effectively clear and concise statement of project requirements in the contract shows that IBM could not have had that presumed sense of clarity about the project.

In August 2009, as the project was nearing its conclusion, the QH Project Manager was asked to maintain a ‘holistic view’ (WS085) of the Project’s schedule of work. This request was in response to IBM being unable, at the June 2009 Board Meeting, ‘to deliver a base-lined schedule and critical path for the Project’ (WS085, p. 13).
4.6 Summary and Conclusions

There are clear and obvious factors which can be identified as having either not occurred or had been executed poorly which could be considered the causes of project failure; any objective measure would conclude that project management failed, there was a lack of requirements definition even though it was the first contracted deliverable, management was in conflict. All of the issues which appear in the literature on failed projects.

Of potential significance is that the evidence provided by witness statements mapped to the project chronology showed that issues related to the identified themes were raised by staff and consultants throughout the project phases, and yet they still they remained as issues that were not resolved nor remediated at the time they were raised. The evidence is that management was made aware of these failures. So it was not a lack of awareness of the failure risks, and therefore highlighting these as the only contributory factors of project failure lacks explanatory completeness, as the issue related to the inability to act on the issues suggests other contributing factors to project failure.

In fact the incoming Executive Director who oversaw the commencement of the project and managed the first few years had the exit report from the whole of government project produced by the external consultants that provided stark warnings of how that project had failed and what was required to ensure the next project would not fail. The only conclusion that can be drawn is that this report was ignored in its totality.

The researcher refers to these as the “underlying drivers of project failure”, and the next chapter (chapter five) will attempt to explain why management failed to act in the face of mounting and seeming incontrovertible evidence that they needed to act, as was reported in the findings of the Commission of Inquiry. As
was discussed in this chapter (chapter 4), the researcher accepts the observation by Vaughan (2016) that managements are not amoral actors and that there must be a deeper, more nuanced answer, to why problems were allowed to persist until they created a billion dollar failed project.

To paraphrase Cobb’s Paradox (Bourne 2011), the management of the Queensland Health payroll project new why their project was certain to end in failure, yet they failed to act appropriately thereby ensuring that the project did in fact fail, and spectacularly. As was evident from the analysis of the witness statements in the conduct of the Queensland Health Payroll project - the management was regularly informed of what was going on with their project by both staff and external consultants (WS013). Management knew that the project was facing problems (or at least should have known). The reports on the 2005 Whole-of-Government initiative (WS039), the KPMG Report (WS003), the KJ Ross report on testing (PD103), the IBM and CorpTech report to ‘reconstruct’ the business requirements (PD063) and the 2009 Queensland Audit Office report (PD108) all provided clear statements identifying where the project was failing and what needed to be done to remedy the situation. Yet the problems persisted until the total project costs had blown out to beyond A$1 billion. Faced with the clear and certain statement that the project was performing badly, and with specific statements of where the project was failing, successive managements failed to act appropriately to stem the problems. The conclusion that can be drawn from this failure to act is that senior executives of the Department, the Governance and steering committees, the Executive Director did not know what specific actions were available to them, or what they specifically needed to do in order to be effective. The Management and oversight of this project were at a complete loss as to how to effectively manage an information technology project.
This research proposes that the following are the contributory factors that led to the Queensland Health Payroll project becoming a failure:

- a lack of domain expertise by senior management responsible for the project as evidenced by the inability or unwillingness to adopt appropriate governance processes;
- stakeholders remained in conflict throughout the life of the project;
- there was a complete lack of accountability for failure evident throughout the project and especially when it came to vendor and contract management.

To examine the case study from the perspective of a timeline of events, of data and advice that was available at the time, to the participants, the researcher has reconstructed the project from the available information. Dekker (2014) refers to this method of investigation as being ‘inside the tunnel’. “This is the point of view of people in the unfolding situation. To them, the outcome was not known (or they would have done something else). They contributed to the direction of the sequence of events on the basis of what they saw on the inside of the unfolding situation. To understand human error, you need to attain this perspective” (Dekker, 2014, p.18). In examining this case, and in identifying the contributory factors to project failure the researcher has set aside any preconceived notions or ideas as to why the project failed. The contributory factors explained in greater detail below are drawn from the perspective of what was occurring in the project at the time. What did the management of the project know, and why they were motivated to pursue the decisions that ultimately led this project to a disastrous outcome?

There are questions which were not answered during the Commission of Inquiry, and answers to these have not been found in the literature;
• Why did senior management of the Department appear to simply ignore the findings of the report(s) that they had commissioned?

• Did senior management not believe the findings, or did they simply not read the reports?

• Did senior management trust the promises of the vendor to produce an outcome despite what they were being told by the external review(s)?

It is not immediately obvious why this situation was allowed to unfold in the manner in which it did. The project appeared to comply with all the appropriate governance structures and reporting requirements, yet an historical or retrospective view would allow that the project was never managed effectively.

Indeed, the findings of the Commission of Inquiry (WS122) state that ‘Its (Queensland Health payroll) failure, attended by enormous cost, damage to government and impact on workforce, may be the most spectacular example of all the unsuccessful attempts to impose a uniform solution on a highly complicated and individualised agency’ (WS122. p.10). The Commissions conclusion was that there were two primary causes for the failure of the payroll project (1) ‘unwarranted urgency’ and (2) a ‘lack of diligence on behalf of State officials’. (WS122. p.217). The Commissions Report elaborated further on lack of diligence, describing it as ‘poor decisions made in scoping the Interim Solution, in their Governance of the project, and in failing to hold IBM to account’ (WS122.p.217). The Commissioner further reported that ‘the problems are systemic to government and to the natural commercial self-interest of vendors’ (WS122.p.218) which supports the observation that Normalisation of Deviance was at play throughout the conduct of this project. However, these findings by the Commission do not explain what motivated senior management to ignore the lessons learned from immediately preceding projects, to ignore the warnings and advice of their own personnel. It is unclear, from the
Commissions report, what specific steps a subsequent project might implement to ensure that they too did not all into these traps.
Chapter Five - The Contributory Factors of Project Failure

This chapter explores the main themes to emerge from the research, and examines theories in order to shed light on why these themes are important, and what can be learned about how and why they have impacted project outcomes in the case study being examined. The theories which underpin these themes is explored in this chapter, and following the hermeneutic circle represents an open-ended process through which an increased understanding of the themes leads to a better understanding of the research problem.

The grounded theory nature of inductive research led to a process (described in Chapter 3) where theories were explored to interpret and understand the data that emerged. This was an ongoing, recursive practice. As more data was unearthed and encoded, more research was required to understand what was being observed on the Queensland Health payroll project. Described as the ‘Hermeneutic Circle’ (Boell and Cecez-Kecmanovic 2010) the literature requires a
‘constant re-interpretation leading to deeper and more comprehensive understanding of relevant publications’.

The data collection and review process became a ‘continuing, open-ended process through which increased understanding of the research area and better understanding of the research problem inform each other’ (Boell & Cecez-Kecmanovic, 2010 p130).

Three key themes emerged from the data:

1. a lack of domain competence,
2. stakeholder conflict,
3. lack of accountability.

Identifying these themes was the initial step, and has been described in Chapter 4 (preceeding). These themes were abstracted from the keyword analysis that was undertaken in Chapter 4. However, identifying these themes does not explain why domain competence, stakeholder conflict, and accountability are issues which could undermine a project’s success.

In this analysis, the first theme; domain competence has been separated into two fields of inquiry; (1) lacking domain expertise, to discuss how this arises and affects a project, and (2) the need for competence, and why specific capabilities are required to effectively lead a complex task. An analysis of the underpinnings of stakeholder conflict in the public sector and lack of accountability follows.

5.1 Lacking Domain Expertise

An IT project employing dozens or hundreds of people from different stakeholder groups, with different training, experience and motivations is a microcosm of society - it is its own unique social construct, existing within a larger
organisation. Examining how a project is executed, how individuals interact within and without that project pushes the researcher towards a consideration of ‘actors-working-in-organisations’ (Manning 2008, p.678) and in particular looking at individual interactions, decisions and consequences. Goffman (1959), investigating the microsociology of face-to-face interactions developed a theory referred to as ‘dramaturgy’ that states ‘we are all performers in the interest of order’ (Manning, 2008, p.679). Dramaturgy refers to the manner in which individuals ‘perform’ in social situations in order to produce a result. Performance ‘comes and goes as required’ and ‘selectively presented, selectively responded to, and selectively adequate to sustaining the working consensus on which interaction depends’ (Manning, 2008)

To manage a project, any project, in such a challenging communication environment as Queensland Health would take exceptional skills. Essentially the question that this research examines is: what skills were required to manage the QHP project to success, and were they evident in QHP leadership?

In the Queensland Health Payroll project there was a range of people, with different backgrounds and experiences interacting in an organisational setting. The manner in which they responded to events or problems depended upon a range of influences including their personal experiences, education and training, the availability of explicit knowledge in the form of documented and available materials, and the use of tacit knowledge. Vo-Tran (2014, p.15) found that ‘stakeholders who possessed greater amounts of experience tended to rely upon the use of their tacit knowledge to manage and share information. Whereas stakeholders who possessed lesser amounts of experience had a tendency towards the use of explicit forms of documentation’.

The actors in the Queensland Health Payroll project came from many different organisations including IBM, CorpTech, Queensland Health, Department
of Works, KJ Ross & Associates, independent contractors, and several senior executives with no discernible experience or content knowledge of information technology projects specifically, being tasked to run a large and complex IT project interacting with other individuals all ‘acting their parts’.

In a ‘Goffmanesque’ environment (Manning, 2008; Vo-Tran, 2014, p.131) individuals will behave differently depending upon whether or not they are ‘acting’ front-stage or back-stage:

- **Front Stage** – where the actors’ actions are visible to the audience and form a part of the performance. The person knows that they are being watched and acts accordingly.

- **Back Stage** – where the actors are present and the audience is not, performers are able to step out of character without fear of disrupting the performance. It is where the facts that are suppressed in the front
stage or various kinds of formal actions may appear. No members of
the audience can appear in the back stage and performers draw on
many methods to ensure this.

- **Intermediate Stage** – the nature of a complex project such as
  Queensland Health has many players engaged on many stages
  simultaneously, playing many parts. Exposing different truths to
different players depending upon which stage they are appearing
upon at any point in time.

Within the context of the Queensland Health Payroll project there was not
a single front-stage or back-stage. There were ‘multiple shows’ happening on the
Queensland Health payroll project, where multiple stakeholders were taking on
multiple roles. Researchers might characterise the Project as ‘the main stage’, each
stakeholder group then had their own back-stage, which in a micro-sociological
perspective was a front-stage for that team.

Information that flows between the back-stage and (multiple) front-stage(s)
is going to be compromised, not unlike what happens in the children's party game
of ‘chinese whispers’ where information passed on between players becomes
changed with no resemblance to the original information and where the meaning
has been lost, as each player imposes their own interpretation of what was heard.
Mintzberg (1994) provides several examples of both unintentional as well as
intentional distortion of the flow of information as it moves between parties. With
such a complicated organisational structure as that exhibited in the Queensland
Health Payroll project, and with multiple stakeholders acting upon different stages,
the reliability and transparency of information would have been compromised -
both intentionally and unintentionally.
‘A fundamental problem in software projects is the presence of unreliable information. In initial information as well as in subsequent status reports’ (Sengupta and Abdel-Hamid 1996,p.1; Carpenter, Bauer et al. 2016,ch.14) report that communication between individuals is challenged by a range of factors including ‘filtering, selective perception, information overload, emotional disconnects, lack of source familiarity or credibility, workplace gossip, semantics, gender differences, differences in meaning between sender and receiver, and biased language’, potentially contributing to the projects eventual failure.

All work is about interaction between individuals and ‘organizational artefacts such as mission statements, goals and objectives, strategic plans and the like, function as tools to reduce choice, not to guide it’ (Manning, 2008, p. 681). In the same manner, the specification of requirements, the business case, the architecture and solution design of the Project are all intended to constrain choice to deliver ‘order’. In this project ‘order’ is represented by a defined scope of work, a defined project plan which sets out not only what work will be done, but also what work will not be done, and by an agreed contract. As discussed in Chapter 4, none of these things existed on the QH payroll project, and any efforts to enforce them were resisted by IBM with the support (tacit or otherwise) of Departmental executives.

Intra-project Communication is critical to avoid the risks of IT project failure, ‘managers don’t leave meetings or hang up the telephone to get back to work. In large part, communication is their work’ (Mintzberg, 1990). Information that flows between the back-stage and front-stage, between actors and stakeholders is compromised both intentionally and unintentionally. The recipient of information needs to be able to assess the data provided and be able to judge its value, veracity and completeness.
Experienced stakeholders ‘tended to have greater back stage presence’ (Vo-Tran, 2014, p.132) through the use of tacit knowledge built-up by experience. In contrast less experienced actors were ‘thrust onto the front stage where they relied upon ‘the script’ (explicit forms of documentation) to complete their performance’ (Vo-Tran, 2014, p.132). On a project as complex as the QH payroll project, with multiple vendors and stakeholders, actors would be holding one set of conversations back at the home organisation office, another with their project colleagues and a third with the QH commissioning client. When the conversations finally presented themselves to executive management in the State Government, without skills and personal experience to fall back upon, the only resources at their disposal were the formal procedures, committees and documentation.

This issue of transparent flows of information between parties, of experts being able to make informed decisions utilising tacit information compared to less experienced people needing to ‘follow the script’ (Vo-Tran, 2014, p.135), of actors controlling the release of information, and of stakeholders presenting different versions of themselves across multiple stages becomes critical when one considers both the makeup of the governance and management of the Project and the individuals involved. “The involvement of non-IT stakeholders can actually work detrimentally and confound and confuse proceedings, even causing error” (Engelbrecht, Johnston et al. 2017,p.1003). Non-IT experienced management, placed in a position of authority “may be influenced by some suppliers or colleagues to whose IT knowledge they had access, and insist on a certain course of action” which may result in confusion, delay or inappropriate decision making, and contribute to the risk of IT project failure.

An appropriate lens through which to view this performance construct has been described by Kruger and Dunning (2009) and is referred to as the Dunning-Kruger Effect. This effect (Kruger & Dunning 1999, 2009), is where the less
competent an individual is with respect to a particular domain then the more they are likely to overstate their perceived knowledge and ability. This may be referred to as a ‘confidence/competence dissonance’ (Ryvkin, Kraic et al. 2012). Individuals that lack competence in a particular domain (incompetent) but are not self-aware of their lack of competence, generally perceive their performance to be not significantly inferior to those who possess significant competence, training and ability (the experts).

This phenomenon has also been described as the Unskilled and Unaware Problem (UUP) (Ryvkin, Kraic et al, 2012). Essentially UUP argues that individuals that are unskilled in a particular domain overestimate their own competence in both absolute terms and relative terms. In contrast, top performers underestimate their absolute and relative performance, seeing themselves as not performing as well as they actually do. Kruger and Dunning (2009) found that an unskilled person was more likely to dramatically misstate their absolute and relative competence.

This research (Ehrlinger, Johnson et al. 2008, Ehrlinger, Mitchum et al. 2016) argues that UUP is a persistent feature of decision making. Furthermore, and potentially much more concerning for complex IT projects, Kruger and Dunning (2009) determined that the skills necessary to do the job, are the same skills necessary to identify competence in others. This facet of the UUP research is particularly important when an unskilled individual is placed in a position of decision making authority, in this case with respect to an IT Project. Where an unskilled individual possesses neither the skills necessary to do the job, nor the skills necessary to identify competence in others they are not in a position to make informed decisions on complex issues. The application of this principle to the Queensland Health Payroll project would suggest that the Executive Director, the Department Secretary, and the governance boards lacked the skills needed to
identify competence in others, and to comprehend informed advice when it was provided.

Engelbrecht et al (2017 p.998) aimed to “identify whether a causal relationship exists between the various components of business managers’ IT competence and IT success”. What they found was that a “business managers’ IT competence can, and does, exert a substantial influence on project success” (Engelbrecht et al ,2017, p. 1001). They reported a ‘surprising’ finding where a lack of knowledge or competence was likely to have a negative impact on project outcomes, “although one would have expected a positive relationship and a positive impact” (Engelbrecht et al ,2017. p. 1002) the findings emphasised the negative outcomes associated with a lack of competence, and a lack of awareness that failing produces.

Engelbrecht et al (2017 p.1002) also found that ‘business managers may be influenced by some suppliers or colleagues to whose IT knowledge they had access, and insist on a certain course of action. If that business manager is particularly influential in an organisation, then there could be similar confusions, delays, and even inappropriate decisions’. This finding is reflective of the behaviours referred to in the Witness Statements. The senior executives of Queensland Health deferred to the advice of the vendor, rather than their own staff. Having chosen to discount the concept of “amoral actors”, it is this lack of knowledge of information technology, and the executive’s inability to parse the information being presented that builds the foundations of a theory to explain how the Queensland Health payroll project became so dysfunctional and ended in failure.

Given the importance of information technologies to business success, and their presence in almost every endeavour, one would expect to see an increase in technically literate, skilled or experienced managements to provide effective
oversight and governance. It has been found that (Coertze and vonSolms 2013, p. 3362) only 10 percent of organisations had Chief Information Officer (CIO) or equivalent representation at board or executive level of organisational governing management. Only 15 percent of organisations had board members with any IT-related qualifications, and in their United Kingdom (UK) sample, no organisation exhibited board level oversight of organisational IT through qualified representation directly as a board member. A focus on general business competence over specific IT competence continues at the CIO level where less than 50 percent of CIOs in the United States of America (US) public sector had primary qualifications from technical or engineering backgrounds (Ionescu 2017).

Narcissism, in modern terms has been defined as ‘a person who possesses an extreme love of the self, a grandiose sense of self-importance, and a powerful sense of entitlement’ (Duchon and Drake 2013), and while generally applied to individuals, the concept of narcissistic personalities has also been applied to groups and organisations brown (Brown 1997). Of significance in this research is that ‘the narcissistic personality is characterised by the denial of a difference between the ideal and the actual self’ which segues directly into the studies of competence versus confidence by Kruger and Dunning (2009) and Ryvkin, Krajc and Ortmann (2012). The narcissistic leader that holds ‘very inflated self-views and (is) preoccupied with having those self-views continuously reinforced (Campbell, Goodie et al. 2004), was a behaviour which was evident on the Queensland Health payroll project, where the evidence suggested that the project was in trouble this was discounted or ignored because it did not fit the “self-image” of the project leader that everything was under control.

Narcissistic leaders in organisations are more likely to engage in behaviour which might lead to failing standards and reduced ethical and moral behaviour (Alvinius, Johansson et al. 2016) which could be seen to be an antecedent for the
normalisation of deviance’. As standards fall, decision by decision, what is considered normal behaviour slowly erodes until a ‘new normal’ gradually and almost imperceptibly emerges.

Narcissism is growing and becoming more prevalent and we can expect to see an increase in organisational narcissism as a direct consequence. It has been reported (Twenge and Foster 2010) that ‘there has been a 30% tilt towards narcissistic attitudes in US students since 1979’, and that ‘The Narcissism Epidemic’ (Twenge and Campbell 2010) breeds ‘the idea that being highly self-confident is the key to success’. Twenge and Campbell (2010) were at pains to point out that there is no correlation between confidence and successful outcomes. Kremer reported that ‘over 15,000 journal articles have examined the links between high self-esteem and measurable outcomes in real life, such as educational achievement, job opportunities, popularity, health, happiness and adherence to laws and social codes’ and found no correlation or causation (Kremer 2013, p.4).

Twenge and Foster (2010) noted, over the last 30 years confidence has replaced competence. Positive thinking has replaced knowledge. An increase in narcissism correlates with the unskilled and unaware problem (UUP) in that ‘individuals become so self-obsessed they cannot identify their own weaknesses or learn from others’ (Kruger & Dunning, 1999, p.38).

Leadership of the payroll project exhibited this misplaced thinking even after the project was declared as the worst failure in the history of the public service and a commission of inquiry called. At this stage, presenting to the commission of inquiry one would expect the project executives to be expressing contrition, or at least qualifying their statements. Ms Perrot has referred to the tender evaluation process as being ‘tightly managed’ (WS008 pp.5) and comment in hindsight that appears to be naïve at best, and certainly consistent with the expression of narcissistic behavior where an individual cannot identify their own weaknesses. Ms
Perrott blithely states that ‘teams were made-up of subject experts’ and yet the performance of the project and with the benefit of being able to reflect one would clearly question how expert these individuals were. Her comments that ‘Mallesons had been appointed in August 2007 to advise on the procurement process and contractual arrangements’ (WS008 pp.5) appears to ignore the fact that Mallesons had in fact advised the State that ‘we believe on balance that IBM’s Offer gives rise to a greater number of material issues and less thought has gone into IBM’s Offer regarding contractual mechanisms that will assist the customer or enhance the working relationship between the parties’ (WS014, p. 39). Reading her statement to the commission on face value it appears that Ms Perrott is almost delusional about what actually transpired on the project. To read these comments, which were made to the commission of inquiry investigating the failure of the project for which she was responsible and accountable, has the appearance of operating in an alternative reality.

The IBM Program Director (Mr Doak) and the CorpTech Executive Director have made statements that defy any rational explanation. Mr Doak claimed that he was never made aware of any person not being paid properly or of any fault with the system. A statement that simply defies rational explanation and can only be understood in the context of being so absorbed in one’s own self-interest that they have can ignore what is going on around them.

Ms Perrott states that ‘appropriate Governance arrangements were implemented within CorpTech, IBM, SSP’s and Agencies’ (WS008 pp.7). Again, at the time that this statement was made Ms Perrott was facing a commission of inquiry. Had this statement been made at the beginning of the project, or even during its execution an observer might be able to accept it. But to read this statement in the context of the historical “train-wreck” that this project had become is to question how an experienced senior executive could have such a
deluded view of the conduct of the project and her own role in the ultimate outcome.

This narcissistic self-belief and confidence may go some way to explain why an executive with little knowledge of information technology and no formal training or experience in information technology would agree to take on the responsibility of running ‘the largest organisational reform undertaken within the State Government’ (WS122, p.9). When it comes to the QHP project, it was stated very clearly by the Deputy-Secretary of the Department that the Executive-Director was not skilled in information technology but was a very experienced people manager with greater than 30 years in the public sector (WS026, 2013). The Executive-Director described her education and work experience as mostly being in the human resources domain (WS024, 2013).

The potential risk that this lack of (Information Technology) domain expertise potentially causes for Information Technology projects generally, and the Queensland Health project as a specific example is encapsulated by the Dunning-Kruger Effect (2009), ‘that incompetent individuals lack the metacognitive skills that enable them to tell how poorly they are performing, and as a result, they come to hold inflated views of their performance and ability’ (Kruger & Dunning; 1999, p. 38). They are therefore potentially prone to ignore mounting evidence of their contribution to project related issues, to over-estimate their own ability to diagnose and resolve issues, and to listen to and take advice from unreliable sources. All of which were evident in the witness statements.

Of even greater concern is the UUP findings (Ryvkin et al, 2012) that not only do the domain illiterate individuals tend to overestimate their own ability relative to their actual performance, they are also at risk of being deficient in identifying relevant domain competence in others, ‘participants who scored in the bottom quartile were less able to gauge the competence of others than were their
top-quartile counterparts’ (Kruger & Dunning, 1999, p.37). Furthermore, they found that ‘incompetent individuals fail to gain insight into their own incompetence by observing the behaviour of other people. Despite seeing the superior performances of their peers, bottom-quartile participants continued to hold the mistaken impression that they had performed just fine’ (Kruger & Dunning, 1999, p.38).

A possible explanation contributing to the Queensland Health Payroll project failure is that where managers are not technically competent, but perceive themselves as managerially capable, not only are they potentially at risk of overestimating their own ability and underestimating the relative competence of the skilled workers on the project, they do not have the skills to discern the quality of advice being given to them. Essentially, the evidence suggests that they are at high risk of not being able to assess the difference between the veracity of a confident but incompetent colleague or vendor providing advice, in comparison to a competent but less-confident colleague.

These managerial perceptions about domain expertise, confidence and competence carry the risk of significant contribution to poor project management decision-making and governance with implications for overall project failure and success. The analysis of the case study data show (Chapter 4) that different parties to the payroll project, from different vendor and stakeholder groups, were ‘acting’ in back-stage and front-stage scenarios, and that they withheld information in order to manipulate outcomes (PD017, PD018, PD019, PD065).

The decision-making senior project manager with accountability, responsibility and authority needs to be able to assess the information provided to them in order to make well-informed decisions. It is contended in the interpretation of the QLD project data in this study that the consequences of placing domain-
challenged persons in positions of project-critical authority will result in unsatisfactory outcomes where:

(1) managers who lack domain expertise will irrespectively act the part that they perceive they need to adopt;

(2) these managers tend to be incapable of identifying the skilled and competent individuals that can be trusted for expert advice;

(3) these managers will not have the cognitive or experiential tools to determine an appropriate course of action when faced with a project stimuli; and

(4) these managers are likely to confuse confidence with competence and may be subject to undue influence by other incompetent actors.

In summary, the Queensland Health Payroll project was potentially placed at significant risk by failing to appoint management, governance and oversight that comprised sufficient domain expertise appropriately matched to the size, complexity and nature of the project. The interpretation of the case study data provides explanations for project failure from the literature, that together provide a feasible set of reasons for project failure that were not explicitly addressed by the Commission of Inquiry report.

5.2 The Need for Competence

The research into the Dunning-Kruger Effect (Kruger & Dunning, 2009) and the UUP (Ryvkin, Kraic et al. 2012) show that lack of managerial domain expertise also leads to a lack in the ability to identify competence in others. Research into the UUP problem also found that if competence is improved through training, the ability to identify competence in others also becomes more accurate (Ehrlinger, Johnson et al. 2008, Ehrlinger, Mitchum et al. 2016; Kruger & Dunning, 2009).
The Kruger-Dunning research also demonstrated that those individuals lacking in domain expertise were least likely to benefit from ‘social comparison’ (Kruger and Dunning, 1999, p.1131). This is where they are unable to modify their own performance simply by observing the performance of others. To achieve this, intervention is required through education about the domain (Kruger & Dunning, 2009, p.1128).

The June 15th, 2015 issue of Businessweek (Ford 2015)\(^4\), was a special edition about computer coding. The essay which outlined the importance of coding stated:

‘Software has been around since the 1940s. Which means that people have been faking their way through meetings about software, and the code that builds it, for generations. Now that software lives in our pockets, runs our cars and homes, and dominates our waking lives, ignorance is no longer acceptable. The world belongs to people who code. Those who don’t understand will be left behind’.

Horowitz (Horowitz 2014, p.81) argued that ‘engineering managers should code 30% of their time’. Horowitz (2014) related his own experiences and noted that when he lost coding skills he faced issues such as an increasing ‘technical debt’ and a loss of ‘continuity of understanding’ inhibiting his effectiveness as a leader.

While there appears to be little in the academic literature on the benefits, or even the experience, of senior executives learning to code, it is a topic regularly discussed in the professional literature. (Bassellier, Benbasat et al. 2003) emphasized the importance of specific IT project management knowledge and experience as two of their seven dimensions of IT competence. Engelbrecht et al

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\(^4\) The BusinessWeek special on coding does not have page numbers
(2017) “call for attention to be paid to the contribution of individual business managers' IT competence, and involvement, in IT project success”.

Reinforcing the lessons learned from Ehrlinger et al. (2008) and Kruger and Dunning (2009) the benefit that comes from being trained in the domain specific area is to increase the ability of the manager to identify informed opinion, and to make informed decisions. The executives and senior management of the Queensland Government were shown by the case study (Chapter 4) to be not potentially equipped to understand the information being presented to them, much less to evaluate the veracity of the actors presenting the data. Senior management ‘acting’ their part uncritically accepted instruction from vendors (WS012, p.10) that bypassed their own staff (WS008, p.13) reflecting the scenarios described by both Ryvkin, Kraic et al (2012) with respect to the UUP problem, and Kruger and Dunning (2009) with respect to competence versus confidence.

Complex issues arising between the internal project team and the vendors were potentially inappropriately treated as ‘personality issues’ (WS008, p13) when they were issues which required domain aware decision making. Instead, the executive director would ‘suggest she facilitate a meeting’ (WS041, p.8) rather than critically examine the issues being presented. Individuals that expressed concern about the direction the project was taking (WS013, p.3) were placed on ‘a list of people that (IBM) didn't want on the project … apparently, anyone who had put up any objection to what IBM were doing or raised any issues, their name was on that list’ (WS013,p.13). Thereby demonstrating the UUP effects of a lack of managerial competence in a specific and complex domain.

When the CorpTech contract management team attempted to hold IBM to the contract, despite its deficiencies, ‘IBM responded by going to the Director-General of the Department and demanding the removal of “problematic employees”’ (WS013, p.12). The Director-General then advised Ms Perrott to
remove personnel from the contract management team’ (WS012, p.6). Thereby showing the lack of competency impacts up the line of command, where domain expertise would not be expected, but appropriate delegation of decision making by referring the IBM complaint back down the line, where the Director General perhaps could have perceived (without the need for knowing anything about IT – but understanding procurement and contract management processes) the motivation for the IBM play in bypassing project governance. These concerns by IBM should not have been actioned at the Director-General’s level of authority, but rather they should have been passed back to the authorised domain experts to resolve according to project rules. It would appear that in these specific cases, even the Director-General was subject to both the UUP problem of over-confidence in the face of an unknown problem, and also being subject to the Goffman-esque effects of playing the part that was expected of a senior bureaucrat despite not being equipped to do so.

Executives that lack knowledge of information technology, and essentially the challenges inherent in developing a large complex body of software, are ill-equipped to take on the role of lead project manager of a complex IT project. Those that do not possess awareness of the importance of their lack of domain specific knowledge but perceive themselves as role capable, risk not being able to differentiate between good advice and poor advice. They can neither identify self-serving advice nor understand the consequential impact of poor decisions on the project for which they are accountable. Without explicit training, the lead project manager or executive is at risk of being potentially easily influenced by others that exhibit strong confidence, but lack technical competence.

As indicated by Kruger and Dunning (2009), this managerial risk can be remediated by training in the skills specifically relevant to the domain. The goal of this training should not be to create a technical professional out of the executive,
rather it should be to provide the skills and literacy necessary to understand what is happening on the project, provide the requisite knowledge to evaluate information presented to them, and how to weigh that information using objective analysis.

5.3 Stakeholder Conflict

The stakeholders to an IT project, and to the Queensland Health Payroll project specifically are many and varied. In the case study project, the stakeholders are comprised of the Department of Public Works, The Queensland Premier, The Department of Health, CorpTech (the Government shared services initiative), IBM, Accenture, KJ Ross Pty Ltd, Arena Consulting, PriceWaterhouseCoopers, independent contractors, hospitals, and many more. In addition there are independent contractors engaged by the Departments and agencies, and the vendors and solutions providers.

Both Vaughan (2016) and Dekker (2014) found in their research into large scale disasters, such as the Deepwater Horizon oil platform rupture or the Challenger Shuttle explosion, that these disasters are not the result of one or a handful of sudden mistakes. ‘Mistake, mishap, and disaster are socially organized and systematically produced by social structures’ (Vaughan, 2016 ch.1). ‘Accidents can happen without anything breaking, without anybody erring, without anybody violating the rules they consider relevant’ (Dekker, 2014 p.5). The conditions that come together to result in the final disaster had been cemented into the psycho-social structure of the organisation probably since the beginning of the project and while perhaps unexpected and appear sudden at the time, the contributory factors can be viewed as potentially foreseeable and even avoidable.

Dekker (2014, p.679) noted that most probes into failure or accidents appear to assume that project participants ‘decision making is driven by rational,
fully informed choices, (thus) concluding that they either must have been amoral calculators, who prioritised production or personal goals, or slackers, who somehow failed to invest in their own full rationality, leading to reduced situation awareness or shortcuts’. Vaughan (2016. p.1996) dismissed the notion of ‘amoral actors’ in the Challenger disaster, and found that failures, and disasters, are not incidents where stakeholders have broken the rules, rather they are a product of the social structure of the organisation that had existed from the very outset of the project, and probably long before.

The social structure of an organisation undertaking information systems projects is influenced by the various players. Game Theory (Aumann and Brandenburger 1995), analyses games ‘in terms of what the players know or believe about themselves and the other players in the game’, and whether or not they will each act rationally according to ‘what they know or believe about the game and about each other’s rationality, actions, knowledge, and beliefs. (Aumann 1995. p.1). Viewing a project such as the Queensland Health Payroll project, which had multiple stakeholders from multiple groups (or types of organisation), through the lens of game theory provides a theoretical construct to examine how the parties interact, and what might have contributed to the project outcomes.

When considering the conditions under which each party entered the ‘game’ (project), they would each have had some perspective of what they wanted to achieve as an outcome, their “payoff function”. To be considered rational, a player must “know his own payoff function, and knows the strategy choices of the others. Then the players’ choices constitute a Nash equilibrium in the game being played” (Bach and Tsakas 2014). Each player would also be assumed to have at least a general understanding of what payoff each other party is seeking by entering the game, and what strategies they might adopt to achieve their payoff. It might be assumed that IBM had a payoff of function of making a profit and having
a client reference to win further work. It might be further assumed that the Queensland Government, incorporating all of its agencies and Departments, had a payoff function of a working and successful payroll solution for the Department of Health. Every other participant would have their own payoff function and strategy for achieving that, according to game theory. Should a payoff function be absent the party would not be considered a ‘rational actor’ (Bach & Tsakas, 2014, p.51).

In game theory there are two types of knowledge – Mutual Knowledge and Common Knowledge (Lo 1996, p.471). Mutual Knowledge is where the actions and strategies of other players are known. This does not need to be “common knowledge“ where all information is open, transparent and shared as opposed to mutual knowledge which may be hidden but understood by all parties. Lanzi (2012) states that “according to Goffman, game theory is flawed because it applies a single-level model to two-leveled situations“. Goffman (Lanzi 2012), in this circumstance is suggesting that the situation is more complicated and complex than is represented by a one-dimensional game. It is suggested that the challenge in games where there are greater than three players is that because the variable is mutual knowledge rather than common knowledge, if each player gets different information about an individual players’ payoff conditions or actions then this results in a lack of equilibrium (Bach & Tsakas, 2013).

Essentially, by considering Game Theory through the lens of Goffmanesque-behaviour (Vo-Tran, 2014) researchers can identify a highly complex game involving n-players, where information is obfuscated, and transparent decision making is non-existent.

Conflict was highlighted throughout the witness statements. IBM demanding that “uncooperative“ employees be removed from the project (WS012), Queensland Health complaining about ‘someone in contract
management’ (WS012, p.12) interfering in the delivery of the solution. The conflicts existed intra-Governmental between the Departments and Agencies and inter-project between the Government and vendors. It would appear, from the witness statements and project records that there was no clear and agreed shared goal. That the various stakeholders were unaware of what constituted a successful outcome for each party, and therefore had no insight into the strategies that the others parties would adopt to achieve a “payoff”.

According to the Agreement between IBM (as Prime Contractor) and the Queensland Government (WS012), the principal role of CorpTech was to manage the contract between the government and the vendor. Mr Bird was recruited into CorpTech (WS012) in March 2008 with the responsibility for managing that agreement. Mr Bird remained with the project until July 2010. He was a lawyer, with additional qualifications and experience in public sector administration, as well as in computer programming (WS012). He earned a Masters in IT from Queensland University of Technology. Mr Bird appeared to have appropriate domain expertise, qualifications and experience to undertake this role.

Commencing work in late March 2008, Mr Bird notes that the 2007 contract with IBM was ‘an agreement to agree’ (WS012, p. 3) and that unlike what would normally be expected for an executed contract, key statements of work had not yet been developed or agreed, that the scope was missing, and ‘critical terms relating to the Prime Contractor role’ were yet to be agreed. The contract is the instrument that provides the client with the ability to manage the project effectively. However, it was incomplete and lacked key components more than one year into the project (WS012, WS014).

It was the view of the Contract Manager (Mr Bird) that IBM was ‘in default of the contract early on’ (WS012, p.4) because ‘a large number of contract deliverables were late and of poor quality’ as determined by the Solutions Design
Authority (SDA). The SDA was set up with a process involving IBM submitting a piece of work to the SDA for approval, and, if rejected, to be resubmitted according to the timeframe set down by the process and the manner set down by the process. ‘The acceptance process prescribed in the contract gave SDA five days after IBM’s submission to review the deliverables and either accept or reject the deliverable’ (WS012, p.4).

The relationship between CorpTech/Queensland Health and IBM has been described as having ‘tension between IBM and QH in terms of the Project Directorate governance’ (WS059, p.12). Following the arrival of Ms Berenyi as the new Executive Director, and the introduction of change to the management of the Project Directorate ‘the personality-related tensions between IBM and QH eased’ (WS059, p.13).

In addition to the conflict that existed between the State Government agencies involved in the project and IBM, there was conflict between the agencies themselves. In one email ‘Queensland Health was complaining that there’s some lawyer down at CorpTech killing our project. He’s refusing to sign change requests’ (WS012, p.12).

Game Theory (Lo, 1996) and Goffman (Vo-Tran, 2014) go some way to explaining the actions, behaviours and outcomes of the various stakeholders engaged on the Queensland Health payroll project. That conflict existed between and within each of the stakeholder groups is apparent from the witness statements. Goffman suggests (Dougherty and olsen 2014 p.191) that the individual payoff’s in a game involving so many players need to be explicit and transparent otherwise ‘equilibrium’ will never exist on that game (project). The evidence from this project suggests that players acted the parts as they perceived them (in a Goffmanesque manner) without any real knowledge of what was required or any idea of how to respond to events as they occurred. Without adequate insight borne of
competence the actors in this project relied upon structure and procedure to guide them. Senior executives of the Department acted in manner which would suggest that they were unable to comprehend the payoff strategy of the other players, while vendors appear to have acted in a manner suggesting that they were unconcerned with the payoff for the Department and never set out to achieve equilibrium.

5.4 Lack of Accountability

‘Principal-Agent theory has been the dominant theory at the heart of public sector accountability research” (Schillemans and Busuioc 2014, p.191) and has become standard fare in economics, social science, law and business schools since the 1970’s (Shapiro 2005, p.269). In its most basic form Principal-Agent Theory (Shapiro, 2005) observes that the principal agent such as a Government Department “is in the driver’s seat – specifying preferences, creating incentives, and making contracts that agents must follow” (Shapiro, 2005. p267). The “agent” in the context of the Queensland Health Payroll project is IBM and the other suppliers and vendors.

The relationship between the Queensland Government and the various vendors delivering product and service as part of the QH Payroll Project might be assumed to be a standard case of principal-agent. The agent in this context is seen to be bound by the principal’s requirements, and the contract provides the terms under which that relationship will be conducted. In order for this framework to be effective the relationship between the parties must presume that the principal and the agent ‘are both rational utility maximizers’ (Vinnari and Nasi 2013, p491), where this means they both will be motivated to act to maximise their self-interest. As discussed in previously with respect to game theory, it might be reasonable to assume that IBM is motivated by earning a profit and generating a reference client from which they might win additional projects. The Queensland Government,
being a rational utility maximizer’ would seek to maximise their ‘payoff’ (Vinnari & Nasi, 2013) by achieving a successful project completion.

New research emerged to challenge this seemingly clear-cut perspective of the principal-agent theory during the late 1990’s and early 2000’s when agency problems ‘were identified as a primary cause of failure in the governance of a slate of well-publicised corporate scandals’ (Tihanyi, Graffin et al. 2014,p.1536).

From the perspective of an information technology project the researcher is concerned with the interplay between governance and accountability. Governance in the most general sense deals with the steering and co-ordination of various actors’ (Almqvist, Catasu et al. 2011). Governance is the work of steering an organisation and ‘involves setting goals and using power to monitor their implementation’ (Mutiganda 2013,p520). Accountability, on the other hand, ‘means that the agent or civil servant has a responsibility to be accountable for their actions’ (Mohamed, Youssef et al. 2016, p.440), Furthermore, ‘such accountability should show how the administration has fulfilled its mission and demonstrate that public funds were used efficiently and effectively to assess their performance (Mohamed, Youssef et al, 2016, p.442). It has been argued (Romzek, LeRoux et al. 2012, p443) that there are three basic facets of accountability:

(1) ‘the sources of authority to which the organisation or individual is answerable for performance,

(2) those authorities’ expectations for the accountable entity’s performance, and

(3) the mechanisms by which the accountable entity is held answerable for performance and faces appropriate consequences’
It is proposed (Christensen and Laegreid 2014) that an accountability framework should comprise; political accountability, administrative accountability and managerial accountability (ibid: p.209). In this accountability framework there is a ‘chain of principal-agent relationships’ where voters ‘have delegated their sovereignty to representatives’, who in turn delegate to the public service and authorised officers. Those authorised officers are then accountable within their hierarchy (administrative accountability) to their superiors and for monitoring the outputs and results that have been delegated to them (managerial accountability).

It would appear that public sector governance arrangements are established, at least in part, to protect the principal from loss, and to effectively transfer this risk to the agent. Transferring the risk has resulted in an increase in outsourced arrangements which has had the effect of creating in public sector administrations a permanent role of procurement and contract management which in turn has had the effect of creating a ‘hollowed out public sector’ (Schillemans and Busuioc 2014, p.192). A ‘hollowed out’ public sector is where the public sector has lost the capability to deliver outputs themselves and must rely on the delivery of work product from a contracted private sector. This has led to a large body of research (Dubnick & Frederickson, 2010; Olsen, 2013; Klingner, Nalbandian & Romzek, 2002; Koppell, 2005) in the domain of public sector accountability, which has identified a phenomenon called ‘drifting agents’ – where executive agents are prone to withhold information, serve their own bureaucratic interests and generally eschew accountability’ (Schillemans and Busuioc, 2014, p.192). The principal-agent chain has, in these circumstances, broken.

Schillemans and Busuioc (2014, p.193) extend the concept of drifting agents to discuss what they refer to as drifting forums “which mysteriously choose not to hold their agents accountable, disregard apparent wrongdoings and are sometimes surprisingly uninterested in what their agents actually do”. Forums, as
opposed to agents, represent where a task has been delegated down the chain of accountability not to an individual but to a group where there is a loss of direct accountability amongst the members of the group, and that the forum has become so far removed from the ultimate recipient to whom they owe accountability that the accountability ‘drifts’ away from its intended objective. In the case of Queensland Health it might be seen that the forum perceives their responsibility as issuing a tender, and measures their success by the fact that the tender was issued. Whether the tender is fit for purpose, or whether it will result in the intended outcome is of secondary concern.

Applying this concept to the Queensland Health project, Schillemens and Busuoic (2014) describe a scenario in which principal-agent, or forum-actor, takes place:

1. The principal delegates a task to an agent for a variety of reasons. In the case of QH Payroll the principal, Queensland Government, required an external party or parties to implement a complex IT program which the principal did not have the skills to undertake

2. Conflict arises between the principal (QG) and agent (IBM) where each party has different goals and where, as is explained from a Goffman-esque perspective, (Vo-Tran, 2014) substantial information asymmetry exists. These conditions certainly became prevalent in the QH Payroll Project and have been described in preceding sections. Schillemans and Busuoic (2014, p.195) describe the actions of the agent as being “self-centered and opportunistic”.

3. The problems of “agency drift” become exacerbated by the quasi-autonomous nature of the agent (IBM), making its own choices, deciding risk, and prioritising work.
4. ‘Rational actors may be expected to nurture the advantages that follow from their superior knowledge and informational advantage and exploit the possibilities offered by the conventional information asymmetry. They will therefore, with some exaggeration, naturally prefer secrecy and they will duck and shy away whenever possible’ (Schillemans & Busuoic, 2014, pp198) as can be seen at Queensland Health with the agent (IBM) refusing to be accountable to the principals’ (Queensland Government) contract manager (WS012) who was endeavouring to ensure that the principal-agent relationship was maintained and that the agent met their accountability obligations.

5. Principals are expected to actually care about the outcomes that have been delegated, but this is not always the case (Auel 2007; (Muller 2009,p.327; (Whitaker, Altman-Sauer et al. 2004), and may determine that the cost of implementing controls and oversight is greater than the benefits that they would derive from such action.

6. ‘Assuming principals actually care about the delegated task, assuming they want to hold their agents accountable to some degree, and assuming principals have preferences and want their agents to act accordingly, it is also logical to hypothesize that principals will redress undesirable actions of their agents’ (Schillemans & Busuoic, 2014,p198).

Informed by this principal-agent theory perspective, the question can be asked; “was outsourcing the development of QH Payroll intended to ensure that the objectives of the project were more easily met, or was there an alternate goal being pursued by the forum. Schillerman and Busuoic (2014.p.201) argue that ‘where principal-agent theory would forecast (potential) agency drift, empirical findings rather suggest forum drift: the forum drifting away from agreed upon goals and measures’.

It would appear therefore that a “forum” is not equivalent to a principal and does not embody the same sense of accountability and therefore the assumptions of principal-agent theory may not hold. There is an information asymmetry between actors and forums, as identified by Goffman (Vo-Tran, 2014) and expanded upon by Schillerman and Busuoic (2014) when discussing public sector accountability. This has significant implications for the contract between parties, and how that is managed.

When applying forum-actor principles to the relationship between a Government agency contracting the services of a commercial vendor, the assumption appears to be that the actor (agent) will by its very nature become recalcitrant as it pursues actions that maximise its own self-interest and will not willingly disclose its actions or render an account to the forum (principal) without being compelled to do so. The witness statements and findings of the Commission of Inquiry would certainly bear this out.

### 5.5 Summary and Conclusion

In conclusion, it can be seen that an individual appointed with authority over a complex and technically demanding activity will not have the skills to perform the task, or to exhibit the ability to identify from whom they should be seeking advice. A domain challenged individual lacks a range of competencies that
make them unsuitable when tasks become complicated or problematic. As projects become larger and more complex, the parties to a project need to more explicitly state their outcome objectives for the project. Without this transparency divergent goals will lead to constant challenges, disruptions and complications. In the public sector, at least, principal-agent theory is being replaced by forum-actor theory where forum drift is dragging the contracting party away from their expected role as principal. Forum drift may go some way to explaining why CorpTech, as the contract manager, never demonstrated accountability for the contract with IBM. It should be noted that issues such as stakeholder conflict and lack of accountability are not alternative causes of failure to the three key themes but are largely consequences of the themes.
Chapter Six - A Theory Emerges

The question of most concern to this researcher has been to uncover why, despite all of the preceding research, publications, education, training and certification that is available to individuals and organisations undertaking project management of an information technology solution, a project could still display all of the mistakes, errors and failings that have been identified in the literature.

This chapter sets out to understand why mistakes keep happening, why the same observed failings continue to be reported and to wrap these into a theory that explains, at least with respect to Queensland Health, why large projects fail.

The theme that was the most consistent throughout the project was that senior management was repeatably made aware of project risks and failings. Reports had been written about the whole-of-government project prior to the creation of the Queensland Health project that specifically enumerated the challenges and risks that needed to be kept ‘front of mind’ to the QH project team (WS003, WS004). The literature on failed IT projects provided no plausible explanation to describe the fact that senior executives responsible for the direct execution of the project, and departmental executives with governance and oversight accountability apparently ignored all of the advice that they were presented with.

Following the practice outlined by both Dekker (2014) and Vaughan (2016) the concept of an ‘amoral calculator’ was not entertained. This theory was rejected for two reasons; the first being that the researcher is not qualified to assess ‘amoral behaviour’ and make recommendations on that, and secondly, it is improbable that every executive engaged on the project was acting with ill will towards the project. It was assumed that some other factor was at play.
What emerged from the data was that the executives in charge of the project operating above the hands-on technical level, were manifestly incompetent when it came to issues of information systems project management. The executives simply did not understand the information that was being presented to them, and interpreted professional concerns raised by Queensland Health team members as “personality conflicts”. These executives were presented with several formal reports outlining risks and issues, and acted in a manner that under conventional wisdom, would defy rational explanation - the witness statements and project documents provide no evidence of any action being taken to address the issues raised. On more than one occasion IBM complained that employees of Queensland Health were trying to hold IBM to its contract and make IBM meet its obligations. IBM convinced senior department management that these staff were interfering in the project and senior management subsequently ordered their removal from the project.

Engelbrecht et al (2017) suggest that inexperienced managers will seek advice and guidance from inappropriate sources. Kruger and Dunning (2009) offer the observation that the Unskilled and Unaware (Ryvkin, Kraic et al, 2012) are incapable of identifying their own failings, incapable of independently observing and learning from the competence of others, and incapable of identifying competence in others.

These findings have led this researcher to postulate a new theory: Situational Incompetence.

Situational Incompetence applies when an otherwise experienced executive is placed in a position of authority or accountability for which they lack experience, training or specific skills. In this new role they are effectively incompetent and incapable of providing or recognising reasoned advice, guidance or suggestions.
Situational Incompetence has implications for how leaders are selected for complex tasks requiring specialist IT domain knowledge and technical competence, it may also apply to the disciplines requiring specific knowledge of the technology in that domain (eg: accounting, medicine, engineering, science).

6.1 Testing Situational Competence

It has been argued in this paper that situational incompetence is allowed to persist because of normalisation of deviance (Vaughan, 2009). Normalisation of deviance implies that incompetence is tolerated because it has not previously caused significant failures. It is known that smaller projects have much higher rates of success than larger projects (Johnson, 2015), and as a consequence the skills needed to effectively manage very large projects are rarely put to the test and competence deficiencies escape detection.

This research has postulated the theory of Situational Incompetence. It is necessary therefore to provide a method of measuring the competence of leadership as it applies to a range of IT project situations. The situations being tested are those of increasing complexity and size, and the competence of leaders relative to those constructs.

Creating a measurement instrument requires the identification and creation of an effective scale. Scale development is well established in the literature and the ‘rules’ for creating an effective scale are well articulated (for example: (Churchill 1979; Flynn, Schroeder et al. 1994; Subba-Rao, Solis et al. 1999, Kimberlin and Winterstein 2008) (see Figure 16).

The ‘key indicators of the quality of a measuring instrument are the reliability and validity of the measures’ (Kimberlin & Winterstein, 2008, p.2276). A measure is considered ‘valid’ when the differences in observed scores accurately
reflect differences in the construct being examined (Churchill, 1979, p.64). ‘Validity is often defined as the extent to which an instrument measures what it purports to measure’ (Kimberlin & Winterstein, 2008. p.2278), but an instrument can be reliable without being valid. Reliability ensures that the instrument always generates a reproducible outcome, while validity ensures that the instrument measures what it is intended to measure. In this specific instance the instrument must validly test
leadership competence in a given situation, and it must do so reliably under different inputs.

The first step in creating a measurement instrument (scale development) is to create an ‘item pool’. The goal is to develop a set of measures which might sample ‘all possible contents which might comprise the putative trait according to all knows theories of the trait’ (Flynn, Schroeder & Sakakibara, 1993, p.310).

The domain of construct is determined by a literature search. This research has determined that the domain of construct is leadership competence in a given project situation. The instrument will be developed following the procedure outlined below by Churchill (1979).

The two main constructs being tested are (see figure 17):

1. Leadership Competence, and

2. Project Size and Complexity

The factors which will be used for the initial version of the scale have been taken from prior research into project failure which focussed on factor analysis. In particular the leadership competence construct is been drawn from the work of Englebrecht, Johnston and Hooper (2017), while the software project complexity measures are being informed, principally, by the work of (Fitsilis and Damasiotis 2015).

The item pool has been drawn from prior work as identified in the literature. However, the response format has been modified to ensure validity and reliability in the responses provided. The two dominant response types are dichotomous responses and scale responses based on some for a Likert-type measurement (Clark and Watson 1995,p.312).
Responses incorporating a Likert-type scale require interpretation, and the researcher cannot possibly know the assumptions being made by the respondent when they choose their response variable. It has been argued that a dichotomous (binary) response is more accurate and reliable (Clark & Watson, 1995, p.312). For this reason, the factors being measured have been changed from the originals. Where a Likert-type variable response may have been sought the wording of the factor question has been amended to require a dichotomous response (for example: yes/no).

While some of the factors presented are of a general or generic nature, many are specific. Where the respondent is asked about their experience with and knowledge of technologies, these factors should be modified to reflect the specific
project be examined. For the purposes of the initial presentation of the scale, the factors used have been framed in a generic style.

The framing of the questions has also been structured to be ‘forward looking’, with the intent of being able to predict how a project might be affected rather than looking backwards and analysing a previous project that has been completed.

The model being suggested is a simple X/Y plot. The ‘X’ scale refers to project complexity and the “Y” scale to leadership competence in a technical domain.

**Leadership Competence factors and measures:**

<table>
<thead>
<tr>
<th>Item</th>
<th>Construct</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Knowledge of Technologies - what is your personal and direct experience with the following:</td>
<td></td>
</tr>
<tr>
<td>A1</td>
<td>do you use a personal computer in your daily work life?</td>
<td></td>
</tr>
<tr>
<td>A2</td>
<td>do you have knowledge of how to setup personal computers, desktops, laptops, and personal devices? (updating the software, installing or re-installing the operating system, etc)</td>
<td></td>
</tr>
<tr>
<td>A3</td>
<td>do you have specific experience with client-server technologies and/or web applications</td>
<td></td>
</tr>
<tr>
<td>A4</td>
<td>do you have experience in setting up, modifying or managing a computer network</td>
<td></td>
</tr>
<tr>
<td>A5</td>
<td>do you have experience in database technologies? (for example: can you write an SQL query statement)</td>
<td></td>
</tr>
<tr>
<td>A6</td>
<td>do you have experience in creating and using multimedia technologies (web sites, multi-media, making and posting video's)</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Knowledge of Applications - what is your personal and direct experience with the following:</td>
<td></td>
</tr>
<tr>
<td>Item</td>
<td>Construct</td>
<td>Factor</td>
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<tr>
<td>------</td>
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</tr>
<tr>
<td>B1</td>
<td></td>
<td>have you experience in using email?</td>
</tr>
<tr>
<td>B2</td>
<td></td>
<td>have you every been responsible for setting up and managing an email system which was used by multiple people?</td>
</tr>
<tr>
<td>B3</td>
<td></td>
<td>do you have experience with using the internet in a business setting?</td>
</tr>
<tr>
<td>B4</td>
<td></td>
<td>have you engaged in e-Commerce (buying and selling over the internet)?</td>
</tr>
<tr>
<td>B5</td>
<td></td>
<td>do you utilise collaborative and/or social software in your work environment? (eg: shared calendaring, text chat, wiki, social media)?</td>
</tr>
<tr>
<td>B6</td>
<td></td>
<td>are you required to personally use ERP Systems in your day-to-day work (eg: SAP, Oracle)?</td>
</tr>
<tr>
<td>B7</td>
<td></td>
<td>are you required to personally use office productivity software in your day-to-day work (eg: Microsoft Office)?</td>
</tr>
<tr>
<td>C</td>
<td>Knowledge of Systems Development</td>
<td></td>
</tr>
<tr>
<td>C1</td>
<td></td>
<td>do you have a first degree in STEM (science, technology, engineering, math)?</td>
</tr>
<tr>
<td>C2</td>
<td></td>
<td>do you have training or experience in computer programming (in any language)?</td>
</tr>
<tr>
<td>C3</td>
<td></td>
<td>have you worked on a project that employed the traditional waterfall PM methodology for systems development?</td>
</tr>
<tr>
<td>C4</td>
<td></td>
<td>have you worked on a project utilising an agile methodology?</td>
</tr>
<tr>
<td>C5</td>
<td></td>
<td>do you have experience with end-user computing?</td>
</tr>
<tr>
<td>C6</td>
<td></td>
<td>have you been involved in prototyping?</td>
</tr>
<tr>
<td>C7</td>
<td></td>
<td>have you worked on a project where at least a part of the work was outsourced to an external vendor/partner?</td>
</tr>
<tr>
<td>Item</td>
<td>Construct</td>
<td>Factor</td>
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</tr>
<tr>
<td>C8</td>
<td></td>
<td>have you worked on a project where at least a part of the work was undertaken offshore with an external vendor/partner?</td>
</tr>
<tr>
<td>C9</td>
<td></td>
<td>have you been involved in evaluating, selecting and procuring a software package for use in your organisation?</td>
</tr>
<tr>
<td>C10</td>
<td></td>
<td>have you been responsible for preparing project performance reports, tracking project performance, and/or reporting project performance to a governance committee?</td>
</tr>
<tr>
<td>C11</td>
<td></td>
<td>have you calculated the business value of an IT project?</td>
</tr>
<tr>
<td>D</td>
<td>Knowledge of the Management of IT</td>
<td></td>
</tr>
<tr>
<td>D1</td>
<td></td>
<td>do you know which hardware, networks, communications and database technologies are currently in use in your business?</td>
</tr>
<tr>
<td>D2</td>
<td></td>
<td>do you know which software and applications technology is currently in use in your business?</td>
</tr>
<tr>
<td>D3</td>
<td></td>
<td>do you know about the IT budget in your business, beyond the specific project you are working on?</td>
</tr>
<tr>
<td>D4</td>
<td></td>
<td>do you know what the IT Strategy and Plan is for your business?</td>
</tr>
<tr>
<td>D5</td>
<td></td>
<td>do you know the IT Policies for your business?</td>
</tr>
<tr>
<td>D6</td>
<td></td>
<td>are you aware of the IT Vision and Mission for your business, and can you communicate it to others?</td>
</tr>
<tr>
<td>D7</td>
<td></td>
<td>are you aware of the overall IT Strategies and plans for other Departments (Government) or your competitors (Corporate)?</td>
</tr>
<tr>
<td>E</td>
<td>Knowledge of Access to Information</td>
<td></td>
</tr>
<tr>
<td>E1</td>
<td></td>
<td>do you know who in your organisation are the trusted IT experts and specialists upon whom you can rely?</td>
</tr>
<tr>
<td>Item</td>
<td>Construct</td>
<td>Factor</td>
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<td>------</td>
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<td>--------</td>
</tr>
<tr>
<td>E2</td>
<td></td>
<td>do you know who are the trusted IT experts and specialists outside your organisation upon whom you can rely?</td>
</tr>
<tr>
<td>F</td>
<td>Experience in IT Projects</td>
<td></td>
</tr>
<tr>
<td>F1</td>
<td></td>
<td>have you been a participant (non-managerial) in an IT project?</td>
</tr>
<tr>
<td>F2</td>
<td></td>
<td>have you had a direct role in generating or leading the development of the costs and benefits of an IT project?</td>
</tr>
<tr>
<td>F3</td>
<td></td>
<td>have you had a direct role in the preparation of an IT business case?</td>
</tr>
<tr>
<td>F4</td>
<td></td>
<td>have you had hands-on responsibility for managing the day-to-day activities of an IT project?</td>
</tr>
<tr>
<td>F5</td>
<td></td>
<td>have you been involved in, or led a software development team?</td>
</tr>
<tr>
<td>F6</td>
<td></td>
<td>have you been involved in, or led an IT project to successful implementation?</td>
</tr>
<tr>
<td>G</td>
<td>Experience in IT Leadership &amp; Management</td>
<td></td>
</tr>
<tr>
<td>G1</td>
<td></td>
<td>have you led the development of an IT Strategy?</td>
</tr>
<tr>
<td>G2</td>
<td></td>
<td>have you led the creation of IT policies?</td>
</tr>
<tr>
<td>G3</td>
<td></td>
<td>have you led the creation of IT budgets?</td>
</tr>
<tr>
<td>G4</td>
<td></td>
<td>have you led an IT Procurement project?</td>
</tr>
<tr>
<td>G5</td>
<td></td>
<td>have you led the recruitment of an IT Project Leader and project team?</td>
</tr>
<tr>
<td>H</td>
<td>Scale of IT Project Experience</td>
<td></td>
</tr>
<tr>
<td>H1</td>
<td>small</td>
<td>have you been in an IT project under $1million in productive labour costs or less than 10,000 hours of productive labour</td>
</tr>
<tr>
<td>H2</td>
<td>moderate</td>
<td>have you been involved in an IT project of up to $3million in productive labour or between 10,000 and 30,000 hours of productive labour</td>
</tr>
<tr>
<td>Item</td>
<td>Construct</td>
<td>Factor</td>
</tr>
<tr>
<td>------</td>
<td>-----------</td>
<td>--------</td>
</tr>
<tr>
<td>H3</td>
<td>medium</td>
<td>have you been involved in an IT project of up to $6 million in productive labour or between 30,000 and 60,000 hours of productive labour</td>
</tr>
<tr>
<td>H4</td>
<td>large</td>
<td>have you been involved in an IT project of up to $10 million in productive labour or between 60,000 hours and 100,000 hours of productive labour</td>
</tr>
<tr>
<td>H5</td>
<td>grand</td>
<td>have you been involved in an IT project which exceeded $10 million in productive labour or was greater than 100,000 hours of productive labour</td>
</tr>
<tr>
<td>H6</td>
<td>mega</td>
<td>have you been involved in an IT project which exceeded $100 million in productive labour or was greater than 1,000,000 hours of productive labour</td>
</tr>
</tbody>
</table>

### 6.2 Validity and Reliability

This measurement instrument comprises two separate scales which are contrasted to elicit a picture of an individual’s competence in a specific situation. Validity of the instrument is determined by the scale testing what it is intended to test. In this case the validity would be that the scale accurately tests competency in a given situation. The scales have not been tested for reliability at this stage and are being offered as a suggested approach which will require follow-up research to test the scale, and then the examine the competency of executives with oversight of IT projects.

### 6.3 Conclusion

In this chapter a new theory has been proposed to explain the observed phenomenon of the Queensland Health payroll project. The failure of senior management to follow advice, or to act when the project was clearly facing challenges could not be sufficiently explained by the previous findings as reported.
in the literature on IT project failure. It was observed that many of the previous findings were present in this project but were symptoms of some other factor that had not been adequately defined. It could not be argued that a lack of senior management involvement was a factor in the failure of this project, yet the literature continues to position this as the leading cause of IT project failure. It was true that the project lacked thorough documentation explaining the requirements of the system to be built, but the failure of the vendor to deliver this contracted component was highlighted by several internal experts as well as independent consultants and was ignored by senior management who sided with the vendor and removed ‘problematic’ employees. Communication existed between parties, meetings were held, committees formed. In retrospect it could be argued that communication was inadequate, or not ‘good’. In the context of examining the project in real-time, it could not be argued however that communication was not occurring, but it is apparent that despite the extent of the communication that was occurring there lacked reasonable understanding of what was being communicated.

The findings of this research suggest that the competence of the most senior executive with day-to-day accountability for the project has a direct and material impact on project outcomes. It is further suggested that competence needs to be specific and not generalised, and that the senior manager with accountability and authority for a large and complex IT project needs to have specific knowledge and experience of IT project execution. The most damning finding was that the ‘skills and experience needed to perform the job are the same skills required to identify competence in others’ (Kruger & Dunning, 2009). This finding, and the examples highlighted throughout the case study, demonstrate that an inexperienced senior executive will be incapable of comprehending the advice being provided if they lack the specific experience in the technical domain being managed. What this means is that it would not be sufficient to surround the
inexperienced manager with experts upon whom they would theoretically turn to for advice. The research (for example: Engelbrecht, Johnston & Hooper 2017) and the case study demonstrate that an inexperienced senior executive defers to inappropriate sources for advice and support, choosing not to trust the advice of their internal experts. In the case study, the senior executive treated technical disagreements as personality conflicts and chose to characterise critiques of the vendors performance as interference. The findings of this research suggest that this behaviour is directly attributable to the inability of the senior executive to comprehend the information being presented, resulting in that executive failing to take appropriate action.

This research suggests that previous findings, such as; support from senior management, clear and realistic goals, a strong detailed plan kept up to date, good communication and feedback, user and client involvement, suitably qualified and sufficient resources, and effective change management (Fortune & White, 2006) are not causes of project failure, rather they are consequences of a poorly run project which in the case of Queensland Health Payroll was due to the situational incompetence of the senior executive(s) with direct oversight and accountability for the day-to-day workings of the project.

The final word on situational competence comes from the proceedings of the IFIP Conference on IT Project Failures: ‘Someone implementing IT needs to know which levers to pull, in which context, and at what time’ (Dwivedi, Wastell et al. 2015, p.149).

### 6.4 Implications and Future Work

The implications for industry of this research is that more attention needs to be paid to the skills and competence of the individual that will have direct authority over an IT project. Specifically, the larger and more complex the project
the more important that the leader be technically skilled and experienced. While an unskilled individual may not expose a small project to significant risk, the success rate of large and complex projects is so small (Standish Group, 2015) that ensuring a positive project outcome for even the most skilled and experienced practitioners is challenging. Organisation’s cannot afford the increased risk of management not having the competence to provide effective oversight and governance.

Indeed, the absence of competence can be seen as a significant influence in domains far broader, and potentially of far greater consequence than information technology. In his latest book, The Fifth Risk, Michael Lewis paints a dystopian picture of a US public service being subjected to a White House administration devoid of competence but full of ambition and over-confidence. Could this happen in Australia? The example being played out in Washington D.C. right now could be seen as an interesting laboratory study from which the researcher could draw some lessons.

The fifth risk, the title of the book, is drawn from a conversation the author had with an outgoing executive of the previous Obama administration. Lewis asked John MacWilliams, the chief risk officer of the US Department of Energy what were the top five things he worried about most: “a nuclear weapons-related accident; a potential conflict with North Korea; stoked tensions with Iran; an attack on the US electrical grid; and finally, the fifth and most subtle risk — project management”5.

Setting aside political discussions of the Trump administration, ignoring (for a moment at least) the twitter wars which characterise Mr Trump’s personal style. What is evidenced by Lewis’ new book is the extraordinary levels of

incompetence and disinterest demonstrated by incoming executives and department heads.

The failure of large scale IT projects in the public sector has identified that where an executive lacks training or experience in information technology then they are placing the project at serious risk of failure. This research considered the work of Justin Kruger and David Dunning (2009) and how that translated into IT project performance. What has been observed in this research is that where an executive is placed in charge of an IT project, but lacks experience that was gained from an actual working knowledge of IT, then they are compromised in several critical ways. First of all, these executives who are usually highly skilled and knowledgeable in their own fields, do not have the cognitive framework to understand the advice that is being given to them. Other research (Engelbrecht et al, 2017) has shown that executives that lack basic competence in IT tend to take advice and guidance from the wrong sources, and frequently rely upon inappropriate advice on critical matters. What explains this inability to follow good advice comes from Kruger and Dunning (2009), who have observed that the skills needed to identify competence in others is the same skill needed to do the job. Without some basic understanding of the task at hand, the executive that is accountable for its execution, will be seriously compromised.

On a grand scale this scenario is playing out in the corridors of Washington, but a focus on competence is critical across all disciplines. The Standish Group CHAOS reports have reported some improvement over the decades, with significant gains for small projects (less than $1 million) utilising agile techniques. But very large and very complex projects still have success rates in the single digits.
Critical to the success of public sector projects is competent leadership with knowledge, skills and experience of IT projects.

This research reflects the findings of a single case study, albeit a very large case, but still just one instance of a failed project. The findings cannot be generalised to apply to all IT projects, however they do provide insight into what might be occurring on other projects and why research over the last thirty or more years has not resulted in a significant improvement in project outcomes.

More work is required to confirm these findings on other IT projects, and to consider its implications for other disciplines. The instrument needs to be tested and applied more broadly to determine its validity to reproduce outcomes. As identified (Dwivedi, Wastell et al. 2015) more in-depth and detailed case studies are required of both failed and successful projects to identify what actually happened on these projects and what can be both avoided in the future, and what best practices can be generalised to ensure improved outcomes.

6.5 Limitations of Future Research

The implications for future research from this study are that investigations need to go beyond factor analysis to look for underlying drivers of project failure. It is essential that more in-depth case study analysis be performed so that researchers can evaluate actual projects, rather than recollections of projects.

This researcher was very fortunate in having access to a very large amount of data that was captured as a result of a government inquiry. This was not the only data source that the research relied upon, and gaining access to that additional material was problematic and required determination and persistence. However, the bulk of the research materials came from statements that were gathered under the force of law, and represent a very clear statement about the project. Had an inquiry not been undertaken, the job of examining this case would have been
remarkably more difficult and it is doubtful that the research would have produced such clear evidence for the phenomenon that occurred.

If research into project performance is to continue, then researchers must demand that governments make available the data on failed projects, and that researchers gain access to project audit data. While the current practice is to keep settlements confidential, this serves only to protect those that have failed. These project settlements, and the data from the projects which failed, is required by researchers to develop an understanding of the causes of project failure beyond what was identified in this research, with the objective and intent of improving the performance of future projects.
## Appendices

### Appendix One: Witness Statements

<table>
<thead>
<tr>
<th>Witness Statement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
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### Appendix Two: Project Documents

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Appendix Three: Social Media Essays

The following essays were published on the Linkedin social media platform soliciting industry comment and feedback.

The Numbers are in - 2:51:47

Published on March 29, 2017

https://www.linkedin.com/pulse/numbers-25147-darryl-carlton/

2% - For Information Technology projects that exceed $100 million, the likelihood of success is just 2%.

51% of these projects will fail to fully realise their intended benefits

47% will be abject failures.

These figures represent a huge number of public sector projects. For many governments they seem to thrive on big impressive sounding projects. Bigger seems to be better for many ..... and projects that are intended to be done fast and cheap, something almost always seems to go wrong and they become massive and out of control.

The causes of massive project failure in the public sector are many, and they are complex, but they boil down to the following four key challenges:

#1 - senior executives tasked with the responsibility for running IT projects are more often than not entirely unskilled in information technology and are incapable of understanding the information being presented to them by consultants, salespeople, or their internal experts. Kruger & Dunning refer to this as the "unskilled and unaware problem" (UUP). Donald Rumsfeld was less clear when describing "there are things we know that we know. There are known unknowns. That is to say there are things that we now know we don't know. But there are also unknown unknowns. There are things we do not know we don't know". It is this last category that is the cause of so many problems, senior executives very often do not know what they do not know. When they don't know what they don't know, they are unable to effectively evaluate incoming information, and particularly in making informed judgement calls on difficult subjects. The individuals running IT projects need to know how to build and deliver complex IT solutions .... this is just too hard, and too important to be
left in the hands of uninformed individuals no matter how much experience and talent they have in other disciplines.

#2 - in every large project there are a big number of government departments, agencies and vendors involved - stakeholders for wont of a better term. When looking at how stakeholders interact from the perspective of game theory we know that in order for parties to achieve equilibrium each party needs to understand what the other parties "end game" is likely to be. However, when three or more parties are involved then it is not enough to "know", that information needs to be transparent. Most IT projects have very convoluted end-games. The various parties are not working to achieve the same result, and they have hidden agendas. On large projects these hidden agendas and deliberately skewed information flows will lead to project disaster.

#3 - project team members, disgruntled with the lack of support from senior management that does not understand information technology will start to follow orders even when those orders will lead to absolute disaster. They will not speak up for fear of losing their jobs. They will become obedient to authority in the face of clear evidence of wrong doing. In fact scientific studies (conducted by Stanley Milgram) show conclusively that two-thirds of people will follow orders even when they know that they are doing the wrong thing. Those that cannot stand this environment will leave ... and they are the ones that you most desperately need to stay. Obedience to Uninformed and Unaware Authority is highly dangerous for a large IT project.

#4 - the problem with committees is that no-one is accountable, no-one is responsible. In every investigation into IT project failure there are precious few examples of individuals being held accountable. Facebook has a fabulous system of individuality its called the "karma score" - every developer is measured continuously on the success of their piece of code as it is released into production. Any errors found and the code is returned to that developer and their karma score increases. Facebook can identify which individuals contribute most to successful outcomes and to the repeated introduction of errors into to the code. There must be individual accountability from the top to the bottom of the project. Delegations must be clear. Governance must be transparent.
Way to accept responsibility there IBM!

Published on October 21, 2016

https://www.linkedin.com/pulse/way-accept-responsibility-ibm-darryl-carlton/

IBM was paid a bucket load of money to take full responsibility for this project. It was not a difficult technical project. When you engage third parties to undertake part of the project on your behalf, you do not lose responsibility and accountability.

It is absolutely appalling for IBM to publicly declare "it wasn't us .. we hired some other idiots who didn't do their job". IBM were paid to be accountable. You cannot pass the buck.

Some poor schmuck IBM salesman right at this very moment is telling some other client "trust me, we are in this together, we will partner with you and take full responsibility" - the problem is the salesman will not be there when the shit hits the fan and everyone starts ducking for cover.

When you are paid to take responsibility - you take responsibility!

This is a complete failure of IT Probity & Governance.

If this is the behaviour of large multi-nationals protecting their own backsides instead of doing their jobs, then give me the local SME and business owner who will put their arse on the line and will not shirk their responsibility.

The Department of Industry and Science and Australian Bureau of Statistics produced a report called "The employment dynamics of Australian entrepreneurship" in September 2015. This report stated:

As firms age they contribute less to job creation and more to job destruction. Young firms in Australia contribute disproportionately to net job creation. Young SMEs generated the largest share of total job creation (40 per cent) in the economy.

Over the period 2006–2011 we estimate that 1.04 million full time equivalent (FTE) jobs were added to the economy. Start-ups (firms aged 0–2 years) added 1.44million FTE jobs to the economy whereas older firms (3+ years) shed around
400,000 FTE jobs over the same period.

It's time that the Government started giving these projects to local SME's to run. It is a complete nonsense that just because the Government is big they can only do business with big firms. The history of Government IT projects in every State and Federal Department is littered with failed IT projects run by big firms failing to take responsibility and accountability.
A 12 Step Program for IT Leadership

published on October 17, 2016

https://www.linkedin.com/pulse/12-step-program-leadership-darryl-carlton/

Just like addicts, the continued failure of information systems projects requires a constant commitment if it is to change. Before change can occur however, we need to first of all admit that we have a problem. A problem with the current state of our IT investments and a really serious problem when it comes to how we procure and manage those investments.

I propose here a set of steps, based on the original steps of the AA process;

1. We admit that we are powerless over IT —that our systems have become unmanageable.

2. We believe that a plan greater than ourselves could restore us to sanity.

3. We have made a decision to turn our plans and our architecture over to the care of someone that knows what they are doing.

4. We have made a searching and fearless inventory of our current IT assets and their dependencies

5. We have admitted to our stakeholders, to ourselves, and to our staff the exact nature of our wrongs.

6. We are entirely ready to remove all these defects in our systems.

7. We humbly ask to remove the shortcomings in our existing systems

8. We have made a list of all the damage done by our systems, and are willing to make amends

9. We have made direct amends to our stakeholders wherever possible, except when to do so would injure our customers.

10. We will continued to take personal inventory, and when we are wrong, will promptly admit it.
11. We will seek to improve our knowledge and understanding of information systems, striving for the skills and ability to carry that out.

12. Having had an intellectual awakening as a result of these steps, we will try to carry this message to other IT leaders and information systems professionals.
Understanding Cobb’s Paradox: a deep dive into the causes of a billion dollar IT project failure

Published on September 6, 2016

https://www.linkedin.com/pulse/understanding-cobbs-paradox-deep-dive-causes-billion-dollar-carlton/

My PhD research is nearing its conclusion. I have completed the data collection and analysis, and have entered the write-up phase. Below is the abstract for my thesis as it currently stands.

Cobb’s Paradox asks; “We know why projects fail; we know how to prevent their failure—so why do they still fail?”

In this paper it is argued that either the existing research has failed to identify the proximal cause of the failure of IT Projects, if not then in the practice of IT management the research and lessons are completely ignored. In either case there are questions to be asked and answered. This paper examines a significant IT project failure which occurred in the Australian public sector. Using multi-grounded theory the researcher has examined the project documentation, meeting minutes and governance reports as well as detailed witness statements of more than 160 project participants – comprising more than 7,000 pages of documentation.

This research has culminated in several new and novel findings. Firstly, it is opined, that previous research efforts have stressed the symptoms of project failure rather than the causes. The causes, as identified in this research, are drawn from social psychology and highlight the issues of project execution as a social undertaking. The main causes of failure discussed in this research are; the lack of domain expertise by senior management and vendor representatives, the opposing priorities and goals of multiple stakeholders involved in the project, the inability for project team members to have their concerns appropriately dealt with, and the lack of accountability at all levels of the project structure.
Can The Government Be Trusted With IT Decisions and Projects?

Published on August 12, 2016

https://www.linkedin.com/pulse/can-government-trusted-decisions-projects-darryl-carlton/

The Myki project was originally budgeted to cost $521 million ($494m to Kamco, plus provision for things like banking fees, civil works and access payments to transport operators, and it made provision for increasing card volumes” (pp. 5 – Public Accounts & Estimates Inquiry). This estimate was intended to cover capital and operating expenditure for the build over four years, including ongoing costs for running met card during the transition.

As has been reported that cost has now blown out to $1.54 billion – three times its original estimate. I should also point out that this is the last known figure of estimate and hails from 2012. I for one would love an updated 2016 figure.

What do we know about the Myki project?

• the solution was built by the Kamco consortium (Keane Australia Micropayment Consortium Pty Ltd) Keane Australia, Ascom, ERG, Headstrong, and Giesecke & Devrient Australasia (G&D)

• the Business Case document of April 2004 stated that Mr. Vivian Miners was appointed as the Chief Executive of the Transport Ticketing Agency.

• the Business Case document outlined the profiles of potential providers of the solution, or parts of the solution. These suppliers included; Accenture, Ascom, Cubic, EDS, ERG, Fujitsu, IBM, Octopus, Thales, Scheidt & Bachman, and Wayfarer.

• no mention of Keane, Headstrong or G&D.

• Keane won the role as prime contractor.

• Mr Miners owned $150,000 worth of shares in Headstrong at the time the contract was awarded

• The Business Case identifies the cost of continuing with the existing system at $1.013 Billion, the
cost of enhancing the existing system at $1.076 billion, and the cost of replacing the existing system with a smart card solution at $494 million.

- The business case states “the smart card option is substantially lower in cost and lower risk than either of the magstripe options” (pp.12)

- at the Public Accounts and Estimates Committee inquiry in October 2012 the then CEO of PTV stated that “$494 million was the amount that was contracted with Kamco when the contract was initially set in 2005, but that was not the totality of TTA’s budget.” (pp.5). The actual budget was stated as $998.9 million

- The difference therefore between the original estimate for Myki Smartcard was just 1% less than continuing with an enhanced version of the magstripe solution - that could hardly be considered “substantially lower in cost and risk”.

So, where was the business case for Myki - and I don’t mean the 36 page description with hundreds of pages of appendices. The most basic business case for any enterprise undertaking a large investment is "Anticipated Income over the life of the project/Cost of initial investment plus operating cost for the life of the project + Benefits to the State from this investment".

To be fair we know what the estimated benefits were - $10m per annum over the life of the project. If I was the VC funding this exercise the answer just on that basis would be “no way Jose!” - one billion dollars to earn a $10 million benefit

But lets get back to the basic calculation of the business case.

The total estimated income for Myki ticket sales is $312m for metro train and tram, and a further $78m for metro buses. A total of $390m. That’s what commercial enterprises call revenue folks. If this was a supermarket, that would be total sales for the year.

The Stern Business School at New York University has reported that in 2015 the pre-tax, unadjusted operating margin for rail transport companies to be 33.05% of revenue. What this means when we look at the privately operated victorian transport system is that it should be generating pretax earnings from its revenue (ticket sales) of $128,895,000. This
leaves our transport operators with $261 million to cover all of their operating and running costs.

Myki is costing $1.54B over a twelve year period. That means that the Myki ticketing system is costing $128,333,333 each and every year. Just to provide a ticketing service. Effectively half of all of their running costs are going to the ticketing system. HALF! … then they need to maintain the track, the rolling stock, the signalling system, the stations and everything else.

Your $6.30 ticket to the city comprises $2.10 to pay for Myki alone.

On what planet is an estimate of ONE BILLION DOLLARS on revenue of $390 million an acceptable business case. The reality of more than $1.5 Billion is much much worse. But how in the hell did anyone approve an upfront estimate of $1 Billion - oh, thats right. They didn’t. The business case submission was claiming “substantial savings and risk reduction” by parties that had a vested interest in the project being awarded.

Keane, now a subsidiary of the Japanese NTT Corporation, has very recently been awarded a new contract to continue running Myki.

The Government has an obligation to the Victorian voter and taxpayer to be transparent and to release all of the information related to this disaster.

The lack of transparency and obfuscation around the Census IT disaster is the final straw in the mismanagement of information technology projects.

There needs to be accountability and transparency when billions of dollars are spent.

The Myki business case suggests that the Department investigated the alternative of providing free public transport, but decided against that option because of the cost of meeting the increased demand.

Really!

Would the cost of meeting the increased demand have exceeded the cost of Myki?

On the 15th of March 2016, the current Victorian Premier ordered 65 new trains at a cost of $1 billion. On this basis the State could have ordered an additional 100 trains instead of the stupid and wasteful Myki ticketing system. Everyone would travel for free. The roads would become uncongested.
Pollution would be reduced. Commuting times would be improved. The flow on benefits to the state would be enormous.

Cancel Myki, make public transport free, use the money to buy new infrastructure to make Melbourne a great city.
Census - you reap what you sow!

Published on August 10, 2016

https://www.linkedin.com/pulse/census-you-reap-what-sow-darryl-carlton/

Its official - the online version of the census was a disaster. The Australian Bureau of Statistics suffered a denial of service attack (DoS) when 24 million aussies tried to log on after dinner on Tuesday the 9th of August.

I for one am extremely suspicious of the claim that this was the result of an external and deliberate hack. The denial of service, in my opinion, was because in a very narrow window everyone tried to complete their census - and frankly the ABS should have been expecting this.

There were not many questions that were asked. The website and its data are not all that complicated. How much did it cost for IBM to build the census website?

The answer can be found in the Government procurement records – $9,606,725 for a contract that ran from October 2014.

For that amount of money, for what amounts to a fairly simple website from a content perspective should have been extremely robust and secure with vast processing capacity.

Talking about capacity - I wonder how much effort was expended on load and stress testing. Oh, look - we have the answer from the same procurement records. The ABS spend $54,367.50 between 28th June 2017 and 27th September 2016. So, basically, they had 6 weeks to do load testing prior to census night. Effectively that is two people to do load testing.

Surely someone anticipated that LOAD in a four hour window was going to be the biggest issue that the census faced, followed by security.

Is this yet another example of the wrong priorities from a vendor and client?

The design, development and commissioning of the census solution was a "limited tender", while the load testing was an "open tender". What this means is that IBM's bid was non-competitive. They were invited to provide a solution.

The Australian firm that did the load testing had to bid in a competitive tender, and they had only a few weeks to do
their work. IBM had two years. This is the same vendor that brought us the Queensland Health Payroll solution.

We can and should expect much better from our ICT providers – we can and should expect much better from the Government Departments that are spending public money and operating in the public trust.
Moneyball for I.T.

Published on May 24, 2016

https://www.linkedin.com/pulse/moneyball-darryl-carlton/

Spending less than one quarter on player salaries in the 2002 season than the New York Yankees, Oakland Athletics won 20 straight games, the "winningest" run in American major league baseball history. And they did this with a team that was considered inferior. A team that did not include any superstars.

They did this by upending the metrics that identified success, and building a team based on new knowledge, a data-driven approach to team composition and project success. The old metrics not only did not measure actual team performance, those old metrics were an inhibitor to achieving great performance as a team.

I wrote as much in an earlier post (February 2016) entitled "why projects fail", exploring the reasons that IT Projects continue to perform poorly despite all the accumulated wisdom over the past several decades. The iron triangle of cost, time and quality is misleading and does not provide the data needed for a project to succeed. The lesson from the Oakland Aths is that it costs less to do things properly - not more!

You will save money (a lot of money) managing the portfolio, building a data driven and information rich environment to create "informed decision making". The entire premise of capitalism is a "ruthless drive for efficiency". Government outsources because "private industry can do it better, faster, cheaper" - except when it comes to IT projects it seems. Most public sector IT projects are delivered by commercial firms, and if the failures in the public sector are any indication they are simply not doing a very good job.

**Why do projects fail?**

To recap - projects fail due to the following five main reasons (time and cost overruns are a consequence of these not a driver);

**LACK OF DESIGN** - projects that are successful spend on average 37% of their time on architecture, design and requirements. Projects which fail spend as little as 4% on these activities.
INCOMPETENT GOVERNANCE AND OVERSIGHT - the Kruger-Dunning Effect explains this phenomenon very clearly. There is a massive disconnect between confidence on the one hand and competence on the other. The research demonstrates very clearly that the skills needed to perform a task expertly are the same skills needed to identify competence in others. What this means for IT Procurement, Governance and Oversight is that the individuals and committees charged with the responsibility for selecting vendors and solutions, and for governing the performance of those projects must be capable and skilled to actually do the work in order for them to have the competence to oversee the work. Who is on your steering committee?

SELF-INTERESTED BEHAVIOUR - this challenge is explained as the application of the Nash Equilibrium to managing the various parties involved in delivering a project. In order for the project to succeed each party has to subjugate their own selfish interest to what is best for the project. This does not mean that "the customer is always right" - indeed, the customer also must give up their own self interest in order to focus on what the project needs to succeed.

SUPPORT WHISTLE BLOWERS - whistle-blowers may be the most loyal and honest members of the project team. They are the ones prepared to risk their own job to expose problems with the project. They are the ones that understand the Nash Equilibrium and are prepared to expose potential risks, failures or wrong doing. This phenomena is explained by the research of Stanley Milgram into "obedience to authority" and how individuals will follow the rules no matter how damaging. Every project needs to encourage, support and reward whistle-blowers that expose risks and aid the project in achieving its outcomes.

CONSEQUENCES - there are precious few consequences for failure, or even dishonesty, when it comes to delivering IT projects. This was raised by the Victorian Auditor-General when they reported on IT Project Failure in the public sector. There must be consequences for poor behaviour, otherwise nothing will change.

DATA DRIVEN PROJECT MANAGEMENT

What data is needed to effectively deliver an IT Project?

The purpose of an IT Project is to create value in the enterprise - it might be internal, or it might be in how y create market or customer value. Nevertheless the purpose is the creation of value. Therefore, before a project even begins the organisation needs to identify the value that is going to be created and how that value will be measured. Everything and anything can be measured - do not accept the
argument that this project will deliver "soft benefits" such as customer satisfaction, or employee productivity; these things can be measured and must be measured.

Let's look at an example. A health services provider has calculated that its TCO per claim processed is $0.15. It has agreed with the business that, as the number of claims is set to increase substantially over the next three years, it needs to drive down the IT-contributed cost from $0.15 to $0.12 per claim. It becomes a very enlightening exercise for everyone involved to trend IT cost per claim alongside all other costs per claim. Showing the trends for IT unit costs and other costs together can make it very clear where IT can have additional impact, and where overall business efficiencies are improving (or not). This client can construct its IT budget for claims processing in a very simple manner.

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<th>Year 3</th>
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<td>Forecast Growth Rates in Business Activity</td>
<td>9.2%</td>
<td>12.8%</td>
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<td>Volume of Transactions</td>
<td>30 million</td>
<td>32.760 million</td>
<td>36,953,280</td>
<td>42,865,804</td>
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<tr>
<td>IT-Contributed Cost per Transaction</td>
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Budgets and programs of work can be constructed to align with this very clear view of the value that needs to be created and the cost of doing so.

The user, the business, does not need to get involved in discussions about which technology or which products are going to be deployed to meet these targets – those decisions are properly the responsibility of the CIO and the IT Organisation. The CIO can see very clearly what their annual budget is going to be for this project. What ever they choose to do must fit within these parameters.

If the CIO, in this example, proposes a mobile app as the core of the strategy, so long as that meets the objective of driving the cost-per-transaction down from $0.15 cents per transaction to $0.12 cents per transaction over the agreed timescale then that would be approved.

As the project progresses, and as "things happen" ( I wanted to say when 'shit happens' but some people have objected
How do you create the data needed to manage in this way?

1. you need to know what capabilities the organisation undertakes in order to serve its market - i.e.: create (or steal) a Business Capability Model

2. map all of the applications to the lowest possible level in the business capability model

3. understand the total cost of ownership for each and every application in your portfolio

4. now you can extrapolate the cost of undertaking a business capability

5. count the transaction volume for the business capability

6. estimate the volume of transactions, and cost per transaction

7. as the organisation develops its corporate strategy and competitive plans, map these to the business capabilities which will be impacted (e.g.: the Bank you work for wants to increase the volume of residential mortgages), which business capabilities will this impact and consequently which applications.

8. what improvements are needed to meet the corporate objectives? can this be achieved with the existing systems? if not what will it require? how much is currently spent on this business capability? what is the value created? how much can we afford to spend (per transaction) to meet the organisations objectives? if we extrapolate the volume of transactions and cost per transaction out does that provide an adequate budget to deploy a new solution? can we meet the objective in some other way (there is always another way)?

All of this work, and these questions should be addressed in the business case. All of this data should be constantly maintained, updated and available to the Governance and Steering Committee's. If there is a change in the external environment that fundamentally impacts the business case it
needs to be re-calculated and communicated to the oversight bodies.

Moneyball for I.T., sure it sounds like a lot of work - but it is a lot less work than trying to manage a floundering out-of-control project that has descended into acrimony.
Appendix Four: Key Words

Scope_of_work

Payroll_system

Costs

Workbrain_issues

Project_management_team

Project_board

SAP_Workbrain_issues

Legal_issues

Corptech

Business_requirements

Project_defects

Requirements_unknown

Project_risk_management

QH_Meetings

Testing_defects

Business_issues

Shared_services

Evaluation_process
Support_contract

Extended_lattice_support

IBM_australia

Total_benefit

Contract

Volume

Kruger-dunning

Nash_equilibrium

Obedience_to_authority

Accountability

Payroll_staff

Team_work

Delivery_date_for_services

Requirements_unknown.
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