The Effectiveness of Project Governance: A Comparative Case-Study

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Declaration

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which to a substantial extent has been accepted for the qualification of any other degree or diploma of a University or other institution of higher learning, except where due acknowledgement is made in the acknowledgements.

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Abstract

Project governance (PG) refers to the rules and regulations under which an Information Communication Technology (ICT) project is managed. PG is an extension to the notion of Information Technology Governance (ITG) which ensures that the business and ICT strategy are aligned. PG ensures that the quality of the project is measured and followed in a controlled fashion. PG is implemented by applying three core mechanisms: structures, processes, and people.

Existing research studies indicated that organisations with effective PG increase their earnings by at least twenty per cent as compared to organisation with no governance support. Researchers of ICT projects failures are of the opinion that proper structure, process and people are the biggest contributor to project success. This research study aims to enhance the understanding of top management and PG research by considering the question "What can the top management do in order to take up the PG framework to govern ICT projects"?

The research identifies the factors that influence PG adoption by top management for governing ICT projects. The research first investigates how organisations implement PG and then investigates how these factors emerge and their relationship with PG. As a result, best practices for PG can be developed based on the identified factors.

This study utilises a qualitative model where an exploratory research through multiple case studies has been carried out on two New Zealand companies and two companies in Malaysia. The study considers the views of top management and other personnel who are familiar with the PG implementation and provides insights into how can top management improve PG to govern ICT projects. Qualitative data is collected from multiple sources, including documentation, diary recording and unstructured interviews.

The research identifies a number of significant factors some of which are similar to the ones reported in previous studies and therefore, validates those findings. The study also identifies five new factors that could affect PG and project success.

Further inquiry can be conducted to explore these five new factors affecting PG implementation in organisations. Further research on the case studies presented in this research can also be conducted to validate the interpretations. Further analysis can also be conducted with a follow up survey on the same organisations to determine if the improvements to their project governance have had a positive impact on the ICT projects that have been developed since the change of PG development and implementation.

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List of Acronyms and Abbreviations

AS/NZS	Australian Standard/ New Zealand Standard
AUT	Auckland University of Technology
CAQDAS	Computer-assisted Qualitative Data Analysis Software
CCTA	Central Computer and Telecommunications Agency
CEO	Chief executive officer
CIMA	Chartered Institute of Management Accountants
CG	Corporate Governance
CIO	Chief Information officer
CMM	Capability Maturity Model
COBIT	Control Objectives for Information and related Technology
COO	Chief Operation Officer
EG	Enterprise Governance
EGIT	Enterprise Governance of Information Technology
ERP	Enterprise Resource Planning
ICT	Information Communication Technology
ICTG	Information Communication Technology Governance
IFAC	International Federation of Accountants
ITG	Information Technology Governance
ITGI	Information Technology Governance Institute
ISACA	Information Systems Audit and Control Association
ISO/IEC	International Standards Organisation/International Electrotechnical Commission
IT	Information Technology
ITIL	Information Technology Information Library
LAN	Local Area Network
MY	Malaysia
NZ	New Zealand
OECD	Organisation of Economic Co-operation and Development
OGC	Office of Government Commerce
PG	Project Governance
PM	Project Management
PMBOK	Project Management Body of Knowledge
PMI	Project Management Institute
PMO	Project Management Officer

PRINCE2	Projects IN Controlled Environments 2
PROMPT	Project Reporting, Organization & Management Planning Technique
SAI	Standards Australia International
SCRUM	scrimmage
SWOT	Strengths, Weaknesses, Opportunities and Threats

Chapter 1

INTRODUCTION

1.0 BACKGROUND

Over the last three decades, coping with large information technology (IT) projects has been a difficult and important problem for both practitioners and academic researchers (Ika, 2009, Toomey, 2009; Weill & Ross, 2004; Bekker & Steyn, 2009; Nolan & MacFarlane, 2005). Research studies show that organisations with effective project governance (PG) increase profits by at least 20% when compared to organisations with no governance support (Ross & Weill, 2004; Willson & Pollard, 2009). This shows that the improvement in returns consider revising this PG and the potential improvement of financial returns from projects. The analysis of project failures also provides a long list of things not to do, things to avoid and things that are not useful for best performances (Sharma, Stone & Ekinci, 2009). Various authors (Toomey, 2009; Weill & Ross, 2004; De Haes & Van Grembergen, 2009) are of the opinion that proper structures, processes and person's attributes are the biggest contributors to project success. A form of governance standards should be applied to the ICT project implementation by project managers and teams to maximise the return on organisational investment (Weill & Woodham, 2002). The relationship that is built between project managers and top management must be considered. Top management also must take into account the quality of relationships between stakeholders. This means a comprehensive and effective communication between them is important for project decision making and the implementation of governance guidelines.

PG is about decision making, checks and balances and direction and control. There are rules, structures, enabling activities and over-achieving goals. Bekker and Sten (2009) defined PG as *"a set of management systems, rules, protocols, relationships, and structures that provide the framework within which decisions are made for project development and implementation to achieve the intended business or strategic motivation."*(Bekker & Steyn, 2009, p. 226).

The importance of PG has certainly increased over the last decade with research on the governance of ICT starting in late 1990s (De Haes & Van Grembergen, 2009). As cited in the Harvard Business Review, Nolan and MacFarlane (2005) suggested that the Governing body of an organisation and Senior Executives should be involved in ICT project decisions from pre-implementation to post-implementation.

Making ICT project decisions generally involve three components which are structures **(**Van Grembergen & De Haes, 2009), processes **(**Van Grembergen & De Haes, 2009) and people (Toomey, 2009). Structures identify those who are responsible for making project decisions. This provides both boundaries on operations and authority for decision making (Toomey, 2009). Better decision making structures in ICT projects result in better implementations (Weill & Ross, 2004). Processes ensure that project decisions are supporting the organisation goals. The key processes include the ICT project investment approval, the condition of processes, Service level agreement, chargeback, project tracking and formal tracking of business value of ICT (Weill and Ross, 2009). Structures and processes are designed with a thorough understanding of the people who are working on the project (Toomey, 2009). In order for these people to play their part more effectively, they need to be trained and developed. It is very important to have an effective communication between the people involved in ICT projects.

Again, one of the key normative guidelines released in the last decade (ITGI, 2003) emphasises on the necessity of top management to govern ICT projects. This means an active involvement of top management in project decision making and in the promotion of the organisational change required to achieve the anticipated business value. Six principles have been set out as focus areas in the guidelines, namely: responsibility, strategy, investment, performance, conformance and human behaviour. The PG model is discussed further in Chapter 2.

Despite the lack of research on the role of top management in PG, considerable prior research on PG has focused on understanding and measuring each of the individual components of the PG model. This research project is to be carried out in the interest of gaining a better understanding of PG for project success and aims to answer the following research question: "*What can top management do in order to improve the PG?"*. In addition three sub-questions are

constructed to further expand the scope of inquiry. These are: "*How does the top management govern ICT projects?"; "What are the factors that influence effective PG?"* and *"How important is for the successful project completion that the top management adopt PG framework?".*

1.1 MOTIVATION AND METHOD

As a result of the limited availability of academic research on top management and PG, this research specifically focuses on how top management governs ICT projects. Despite the area of PG improvement, there has been little research on how top management governs ICT projects. Young (2006) called for a specific focus on explaining senior management support through ICT project governance as pivotal for project success. Project success cannot be gained unless top management manages soft issues such as passion, motivation, culture and beliefs. This research aims to gain a better insight into this important aspect of top management involvement and how top management may govern ICT projects.

The method is to undertake case studies on four companies that have completed ICT projects and/or primarily driven ICT projects. Two companies are selected from New Zealand and two are from Malaysia. The selection of different cases and in very different business environments was deliberate so that cross case analysis could be made and significant findings can be expected. These insights can identify factors that are exceptions to implementation, management and other frameworks and precipitate factors that influence PG matters. Such findings would be of value to those who need better understandings of PG frameworks and Governance issues in general.

1.2 OVERVIEW OF THE APPROACH AND STRUCTURE OF THE THESIS

This research is intended for researchers in the field of governance and in other areas related to business administration. The structure of the thesis follows a standard format. It is structured into six chapters that provide an introduction, a literature review, a methodology definition and outline findings, a discussion of the findings in relation to the research problem and questions and a conclusion.

Chapter 2 will present and analyse some earlier work in the focus area and other related research areas that are of use for this study. This includes the discussion of the different meanings of governance and management. It identifies various PG frameworks and mechanisms for PG implementation.

Chapter 3 defines the chosen research process, the research approach and the method for data collection. An exploratory approach towards multiple case studies from New Zealand and Malaysia has been chosen. The exploratory research allows this research to gain better insights and information on PG implementation in these organisations. Within the case study methodology, unstructured interviews, document collection and diary recording are the three primary data collection methods. Narrative analysis and cross case analysis are used in the research.

Chapter 4 reports the research findings. Findings for each of the four organisations studied are presented and sample quotations from the respondents to support these research findings are provided.

Chapter 5 provides an in-depth discussion of the research findings presented in Chapter 4. This chapter begins by answering the research sub-questions and the research question that were derived in Chapter 2. It is followed by a discussion and reflection on the cross case analysis of the field findings. The cross analysis discussion is split into four areas: factors influencing PG, the focus on top management governing ICT projects, the importance of top management and PG adoption, and a proposed “to do” list for top management when adopting PG.

Chapter 6 provides a final conclusion to the research. Implication of practice and research are discussed in this chapter along with the research limitations; recommendations for future research are also outlined.

A full list of references and appendices are included at the end of the thesis.

Chapter 2

LITERATURE REVIEW

2.0 INTRODUCTION

A range of standards guide organisations outputs to ensure consistency and interoperability. The International Standardisation Organisation (ISO) has standardised everything from exit signs in buildings to contractor sourcing. Intra-organisational standards are more common, and as projects have increased and become more complex the question of how to govern and manage projects has become critical. Companies search for a standard that is followed and want to ensure that their projects are done in accordance with the ideas and stipulated specifications. In project management, the term project governance has become increasingly popular and frequently used. However, definitions of the term are currently confused. Some view it as a term that includes all facets of project management, others connect it merely with contractual clauses; some regard the concept as similar to project control while others still relate it to the functions of a project steering committee (Bekker & Steyn, 2009). These are four common interpretations of the term; with such discrepancy in the definition of project governance the area requires further research.

In order to build a better understanding in the chosen knowledge domain, the researcher predominantly use the facilities provided in the university library databases. The research looks at a timeframe of past 10 years. The literatures collected are from various journals, report and book chapters such as Harvard Business review, Communication of ACM, Information Systems Management, European Management, International of Journal of Project Management, IT/Business Alignment and governance, and many others.

The literary review is divided into the following sections: various types of governances, project governance, the difference between governance and management, and project governance frameworks: AS8016, COBIT, ITIL, PRINCE2, and PMBOK. Section 2.1 will define enterprise governance (EG). The review of literature on EG will show that the governance of corporate and information technology are a subset of enterprise governance of Information

Technology. Within this section, corporate governance and ITG are discussed and defined. Some important standards, such as ISO/IEC38500 (i.e. Corporate Governance of Information Technology (CGIT)) are reviewed. Project governance (PG) is discussed in section 2.2. The literature on PG focuses on a more recent integration of governance in organisations. Furthermore, the following section will distinguish between governance and management. These terms are related but not identical. The next section will describe related frameworks and methodologies that help to improve or provide guidelines for projects. A comparison between the frameworks is made in section 2.3. This section will also discuss the usefulness and challenges of each framework based on the reviewed literature. This may include advantages and disadvantages of each framework. Finally, in section 2.4 the literature on existing governance and frameworks procedures is reviewed.

2.1 ENTERPRISE GOVERNANCE

Enterprise governance (EG) is a term used to describe both the corporate governance and the business management aspects of the organisation. EG is used to enhance companies' focus on both the value-creating drivers that move the organisation forward and the maintenance of proper and adequate controls and assurance arrangements (IFAC 2004). The term EG is often used interchangeably to the term corporate governance (CG). The areas covered by the EG and CG are comparable as apparent from the definitions provided further below. One definition for EG was developed by the Chartered Institute of Management Accountants (CIMA) and the International Federation of Accountants (IFAC). It defines EG as:

> *"The set of responsibilities and practices exercised by the board and executive management with the goal of providing strategic direction, ensuring that objectives are achieved, ascertaining that risks are managed appropriately and verifying that the organisation's resources are used responsibly" (CIMA/IFAC, 2004, p10).*

The term CG is used by the Organisation for Economic Co-operation and Development (OECD). It defines CG as:

> *"The system by which business corporations are directed and controlled. The corporate governance structure specifies the distribution of rights and responsibilities, among different participants in the corporation such as the board, managers, shareholders and other stakeholders and spells out the rules and procedure for making decisions on corporate affairs. (Brand & Boonen, 2005, p4)*

The above definitions show commonality. They also emphasise that there are two dimensions of EG, specifically, conformance and performance as demonstrated in figure 2.1.

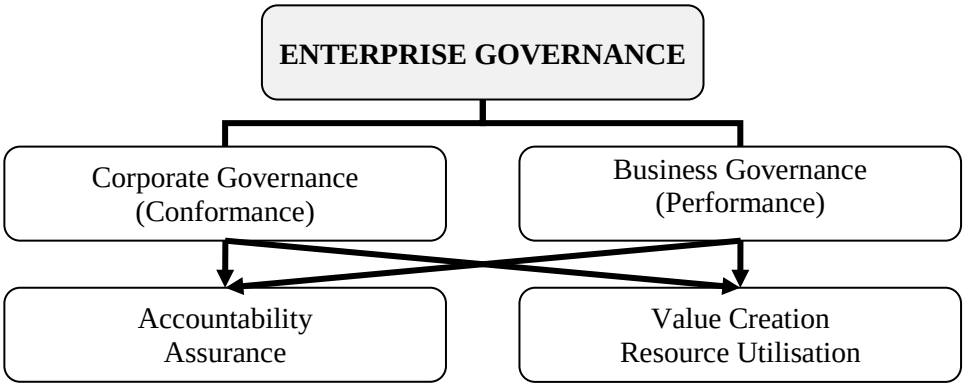

Figure 2.1: Enterprise Governance Framework (Source: Adapted from CIMA/IFAC, 2004, p10)

Figure 2.1 shows that, although the conformance feeds directly to accountability and assurance and performance feeds to value creation and resource utilisation, conformance can also feed to value creation and resource utilisation while performance can feed to accountability and assurance.

Conformance is also called "corporate governance". Conformance focuses on structures within an organisation and ensures that an organisation is to act in accordance with enterprise regulations and legislations so that it can function and make corporate decisions (Brand and Boonen, 2005). In general, the conformance dimension is considered in retrospective view. The performance dimension, on the other hand, is considered with prospective view. It helps the board to focus on strategic directions and make strategic decisions; understand its appetite for risk and its key drivers for performance; and identify its key principles to decision-making (Webb, Pollard & Ridley, 2006; IFAC, 2004). In general, EG is seen as

the argument that good corporate governance on its own cannot make a company successful. Companies must balance conformance with performance.

ICT systems are related to the performance dimension in the organisations as they support the organisational processes by delivering ICT services. However, since ICT is becoming an important part of business in many organisations its function becomes part of the board of directors' responsibility. Therefore it is also becoming related to the conformance aspects of governance (Fink, Huegle & Dortschy, 2006). The attention to the conformance and performance dimensions focuses more attention on Information Technology Governance (ITG) to ensure that ICT is supporting the enterprise goals. The concept of ITG is defined as:

> *"the organisational capacity exercised by the board, executive management and ICT management to control the formulation and implementation of ICT strategy and in this way ensure the fusion of business and ICT" (Van Grembergen, 2004, p. 5)*

As ICT becomes more crucial and more involved in the business itself and not just a provider of information, Van Grembergen & De Haes (2009) extend the definition for ITG to the enterprise of ICT, whereas the business relies ICT is an important part of ITG. The definition of Enterprise Governance of IT (EGIT) is:

> *"An integral part of corporate governance and addresses the definition and implementation of processes, structures and relational mechanism in the organisation that enable both business and ICT people to execute their responsibilities in support of business/ICT alignment and the creation of value from ICT-enabled business investments." (Van Grembergen & De Haes, 2009, p. 3)*

Corporate governance is the set of regulations by which organisations are directed and controlled. The CG must consider ITG as the business relies on ICT therefore CG should drive and set out EGIT. For example, the standard of ISO/IEC38500 defines EGIT as "Corporate Governance of ICT". This standard puts forward six principles for the governance of ICT as described in Section 2.1.1.1. The principles define how to guide ICT-related decision making and address the roles and responsibilities of both business and ICT.

2.1.1 Corporate Governance

CG is a term used to refer to a collection of procedures, rules, traditions, strategies and associations that affect how an organisation is directed and controlled. The Organisation for Economic Cooperation and Development (OECD, 2004, p11) describes CG in the following way:

> *"Corporate governance also provides the structure through which the objectives of the company are set, and the means of attaining those objectives and monitoring performance are determined. Good corporate governance should provide proper incentives for the board and management to pursue objectives that are in the interests of the company and shareholders and should facilitate effective monitoring, thereby encouraging firms to use resources more efficiently." (OECD, 2004, p. 11)*

CG sets out rules and policies for making corporate decisions in the organisation. It specifies the rights and responsibilities of each role in the company and ensures they observe the rules and procedures for making decisions on corporate affairs. CG is a key element in improving economic efficiency as it defines the relationships between an organisation's management, its board, its shareholders and other stakeholders.

Since 2001, CG has been a hot topic in the business world, especially in emerging markets where it can improve an organisation's access to capital and to international markets (Van Grembergen & De Haes, 2009). If followed diligently, CG also functions as a safeguard and safety net that should prevent corporate scandals and provide enough information avoiding the possibility of high-profile collapses of large companies. Examples of high profile collapses, most of which involved accounting fraud or exceeded over budget, are Enron and OneTel.

In the OneTels case, the investigation showed issues with the ICT department. Although OneTel had spent large amounts of money on ICT and that their ICT department was functioning well, it was found that the organisation suffered from inadequate quality of information management. The ICT department suffered from a clear lack of incorporation into the structures of the full company. There was no ICT goal alignment with the organisational strategic goals (Bushell, 2002; Stephenson, 2012). This led to ICT not being utilised in a

manner that could have assisted the company to enhance its internal procedures and capabilities.

The case highlights that ICT can influence strategic opportunities. An organisation will struggle if it does not incorporate ICT into its wider strategic goals and this will lead to the company not being able to fully realise its potential business value. ITG enables the organisation to take full advantage of its information and if overseen in a suitable and professional manner it can be used as a driver for CG.

The structure of the ICT group and its objectives and how it aligns with business objectives of the whole company will impact the company and thus its CG. Fulfilling one without considering the other would be difficult. CG identifies what decisions need to be made, the purpose of these decisions, who should make the decisions as well as how the decisions can be made. However, the main purpose of ITG lies with the alignment of ICT strategies with the CG through the implementing of appropriate structures, processes and communication mechanisms in the organisation.

ISO/IEC 38500 is a well known standard for corporate governance of information technology. It has been published internationally (ISO/IEC, 2010). The standard aligns with the definition of CG that was published and described in both the OECD Principles of Corporate Governance (2004) and the Cadbury Report on Corporate Governance (1992). Users of ISO/IEC 38500 are encouraged to familiarise themselves with the Cadbury report and the OECD Principles of Corporate Governance to ensure they benefit from this standard and understand why and for what it is best used.

ISO/IEC 38500

ISO/IEC 38500 is an international standard created to guide corporate governance of information technology (CGIT) from the International Standards Organisation (ISO) and the International Electrotechnical Commission (IEC). ISO/IEC 38500 can be applied to all organisations regardless of their scale, structure and purpose. It encourages all organisations to think about what they need to do and how they go about doing it. However, it does not provide a blueprint telling any organisation the exact steps of what to do.

This standard sets out how CGIT forms part of an organisation's overall CG and further how the system of CGIT covers the entire organisation. The aim is to assist those at the highest level of organisations to understand and fulfil their legal, regulatory and ethical obligations in respect to the organisations' use of ICT.

The framework comprises definition, principles and a model. Directors must govern ICT properly through three main tasks: evaluate – direct – monitor, illustrated in the CGIT model shown in Figure 2.2. In the model, directors monitor and evaluate the organisation's use of ICT against the pressures and needs of the businesses. They should then direct the preparation and implementation of policies and plans to address any gaps to ensure that the use of ICT aligns with the business objectives. The most important point of this standard is that any director has to ensure that the principles are applied by monitoring, evaluating and directing.

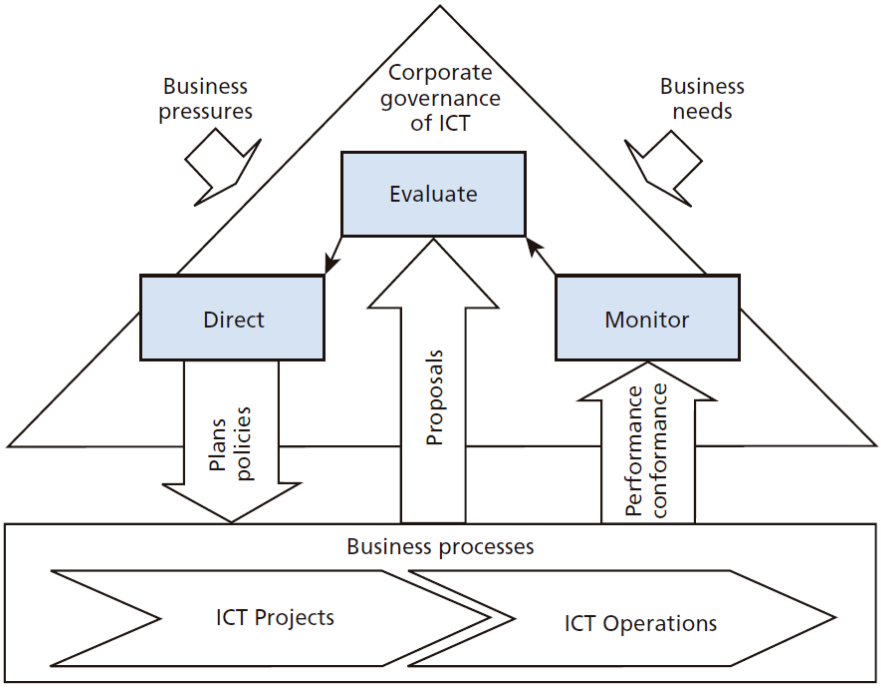

Figure 2.2: Model for Corporate governance of IT (Source: Adapted from ISO/IEC38500:2010, p. 7)

There are six principles for achieving a good CGIT. The responsibility principle should ensure that individuals and groups within the organisation understand and accept their responsibilities with respect to both the supply of, and demand for ICT. The strategy principle focuses on the current and future ICT capabilities and

is related to planning how ICT can best support the organisation. The acquisition principle should drive the organisation to formulate clear requirements made for valid reasons, based on an appropriate and on-going analysis. The performance principle is to analyse and decide appropriate levels and quality of service necessary to meet current and future business requirements. The conformance principle should ensure that policies and practices are clearly defined, implemented and enforced. Last, the human behaviour principle should ensure that policies, practices and decisions are in place to maximise appropriate realisation of value.

These principles provide guidance to those advising, informing, or assisting directors and express the preferred behaviour that guides decision making. The statement of each principle refers to what should happen but does not advise how, when or by whom the principles would be implemented (ISO/IEC, 2010).

The purpose of ISO/IEC 38500 is to promote effective, efficient and acceptable use of ICT in all organisations by assuring stakeholders such as consumers, shareholders and employees that the standard is followed. They can have confidence in the organisation's corporate governance of ICT. It is also to inform and guide directors in governing the use of ICT in their organisation and providing a basis for objective evaluation of the CGIT.

2.1.2 Information Technology Governance

Information Technology Governance (ITG) is defined by the Australian Standard for Corporate Governance of Information Technology (ISO/IEC, 2010) as follows:

> *"The system by which the current and future use of ICT is directed and controlled. It involves evaluating and directing the plans for the use of ICT to support the organisation and monitoring this use to achieve plans. It includes the strategy and policies for using ICT within an organisation*". (ISO/IEC, 2010, p. 6)

The ITG Institute (ITGI, 2003, p10) extends this definition by identifying that ITG is

> "*The responsibility of the board of directors and executive management. ICT is an integral part of enterprise governance and consists of the leadership and organisational structures and*

> *processes that ensure that the organisation's ICT sustains and extends the organisation's strategies and objectives" (ITGI, 2003, p10)*

Also, ITG is identified as:

> *"The decision rights and accountability framework to encourage desirable behaviour in the use of ICT." (Weill & Ross, 2004, p. 8)*

These definitions of ITG explain that the board of directors and the executive management are responsible for ITG. It involves structures and processes that direct the organisation toward achieving its objectives. ITG is the strategic alignment of ICT with the business so that maximum business value is achieved though the development and maintenance of effective ICT control and accountability, performance management and risk management. It addresses the distribution of ICT decision-making rights and responsibilities among organisation stakeholders and the procedures and mechanisms for directing and monitoring strategic decisions regarding ICT (Peterson, 2004). Companies with ICT-related business use different standards and/or frameworks for their ITG. Some believe that their implemented standards and frameworks have helped their organisation to reach a higher maturity level (ITGI, 2003).

In order to achieve a good ITG, ICT needs to be aligned and analysed in the process of ITG. The roles and responsibilities have to be understood and followed by guidelines in the ITG processes. There are five key focus areas (ITGI, 2003) in the ITG. First key focus is the strategic alignment of business and ICT. The aim of strategic alignment between business and ICT processes is to ensure that ICT assets are being used efficiently to assist the entire organisation (Bergeron, Raymond & Rivard, 2004). A second key focus is the delivery of value where it focuses on optimising expenses; the aim is to ensure ICT resources or projects are managed with quality and are delivered on time and within budget. Obtaining value from ICT resources has become increasingly important to boards with the growth in ICT project investment (Nolan & McFarlan, 2005). Risk management as the third key focus has become a critical factor. It addresses the safeguarding of ICT assets and disaster recovery such as financial risk and technology risk. Since organisations are now dependent on ICT resources to conduct their project operations on a daily basis, risk management of ICT systems or projects has become one of the focus areas for ITG. Another key focus is

resource management which is concerned with the management of ICT resources and the organisation of ICT infrastructures within an organisation. Performance measurement focuses on tracking project delivery and monitoring ICT services (ITGI, 2003, p. 29). It determines if the board and senior management have successfully achieved their goals in ICT projects (Buckby, Best & Stewart, 2008).

These five key focuses are derived from two separate concerns. The first concern is ICT's delivery of value to the business and mitigation of ICT risks which is driven by strategic alignment. The second concern is driven by embedding accountability into the enterprise, supported by adequate resources and measurements to ensure that the desired results are obtained. Furthermore these areas are driven by stakeholder value. Value delivery and risk management are outcomes while strategic alignment, resource management and performance measurement are drivers, where the resource management overlays all areas (ITGI, 2003; Weill & Ross, 2004; Van Grembergen & De Haes, 2008).

Most organisations are highly dependent on ICT and its systems. ICT is used to achieve competitive advantages and to create value. The failure rate of ICT projects remains high and ICT projects fail more frequently than other critical projects within a company. Operational ICT breakdowns also happen and cause disruption to processes and lack of information (Müller, 2009; Toomey, 2009).

The key to overcoming such problems is to integrate ICT into the organisation's strategic goals and to set up a plan that outlines in what way that the organisation uses ICT. ITG offers a way to do this and addresses the shortcomings of ICT within an organisation. ITG has gained major recognition via standards such as ISO/IEC 38500:2010 (Corporate governance of information technology) and AS/NZS 8016:2010 (Corporate governance of projects involving information technology investments).

Toomey (2009) explains how ISO/IEC 38500 guides effective leadership and governance of ICT from the point of view of those who control the business agenda, and show how this can lead to substantial economic benefit. He shows how the use of ISO/IEC 38500 standard can lead to substantial economic benefits for a company. ISO/IEC 38500 utilises a set of structures, processes and relational mechanisms to manage and control the information technology and related assets in an organisational context (Van Grembergen & De Haes, 2009 & 2008, ITGI 2003).

CG and ITG are interrelated, thus making ITG a subset of corporate governance. ITG provides the direction and control to ensure that the significant investments made in ICT bring value to the business, that ICT resources are used responsibly and that risk management is addressed properly (ITGI, 2003). This offers the organisation opportunities to transform the way ICT use in business and how the business relies on ICT for the growth of the enterprise. The importance and reliance on ITG makes ICT an integral part of the governance responsibilities of the enterprise, not only for investors but also for regulators and auditors.

Apart from using CG and ITG, organisations must also consider a similar process for running projects. Projects require a standard that guides the project manager how to manage projects in terms of time management and budget and to provide quality information and usage for the organisation. This is often referred to as project governance. Section 2.2 will explain project governance further.

2.2 PROJECT GOVERNANCE

There is a lack of formal definitions for Project Governance (PG). In the absence of consensus in the project management group on what it demands, a study was launched to obtain the views of knowledgeable and experienced academics and practitioners on what the term should entail (Bekker & Steyn, 2009). According to Bekker and Steyn's research, project governance is defined as:

> *"A set of management systems, rules, protocols, relationships, and structures that provide the framework within which decisions are made for project development and implementation to achieve the intended business or strategic motivation." (Bekker & Steyn, 2009, p. 226)*

Their research suggests that the principles of CG should be used to develop a framework for PG. A PG model should be generic but with room for project specifics. PG is an integral part of CG and addresses the definition and implementation of processes, structures and relational mechanisms that allow both ICT and business people to manage and govern an organisation effectively and the creation of the business value from ICT-enabled investments (Van Grembergen & De Haes, 2009). In this case, it specifically relates to ICT project and PG is also an integral part of ITG where PG refers to the rules and regulations under which

an ICT project functions. As with ITG, it covers the mechanisms put in place to ensure compliance with those standards. PG is frequently used in the ICT sector to describe the processes that need to exist in order for a project to be successful. PG will outline the relationships between all groups involved in the ICT project, describe the ICT project information flow to all stakeholders and ensure reviews and approvals are carried out at appropriate stages of the ICT project.

PG not only provides the organisation with a framework of responsibilities and decision-making capabilities; it also ensures that the ICT project implementation and execution will go smoothly. Before the ICT project starts, it is determined who will make ICT project-related decisions and how they will make them. Setting up PG increases the probability of better controls during the life cycle of the ICT project.

The main focus of PG is about choosing the right projects. Doing the right projects require the prioritisation, selection and alignment of projects with the organisation's strategic objectives. In addition to choosing the right projects, the organisation needs to do the project right. Doing the project right requires effective project, program and management processes to deliver the projects with quality, on scope, within budget, reduced risk and on time.

Formerly, PG was focused on project-based organisations getting project orders and then the stakeholders could identify the common interests among the primary threats and chances (Turner & Keegan, 2001). Later, a series of project structures, systems and processes were thought up to ensure the effective delivery of projects was identified (Lambert, 2003). PG extends the principle of governance into a system by which projects, that involve investment in changed or new ICT capability, are directed and controlled from initiation to the achievement of the business outcomes (ISO/IEC, 2010).

Project failure is often beyond the control of the project manager. A study has shown that half of all project failures were due to project governance (Young, 2006). Issues such as inadequate project governance structure or inadequate skills/experience of people in a governance role were shown to be a major cause of project failure (PMI, 2009). A company may have a good project management but not good project governance. Governance of ICT projects is facilitated by experienced, well-trained senior project management and by an established methodology in the organisation for managing projects (Sherma, Stone & Ekinci,

2009). If any of those two components are missing, the project runs a higher chance of not succeeding or not reaching its potential. PG and project management are shown to be related but not identical. PG plays a significant role in preventing project failure and increased project costs. It also improves business benefits and project management morale (Bekker & Steyn, 2009).

Effective PG is vital for a project. It promotes efficient communication between stakeholders, management and project manager. It defends the project against political interference and ensures that project delivery and performance are protected from high-level outside issues. It ensures that such issues and conflicts are identified and addressed on time and that the project continues to be in the strategic interest of the organisation.

Ineffective PG, on the other hand, gives rise to problems such as rapid and unexplained turnover of project managers or project staff, projects constantly failing to meet traditional targets, and the project team working excessively long hours.

2.3 DIFFERENCE BETWEEN GOVERNANCE AND MANAGEMENT

In addition to defining the terms project governance and project management, an understanding of definition of governance and management is essential. Governance and management are closely related but not the same. Governance is

> *"The set of policies, roles, responsibilities, and processes that guides, directs, and controls how an organisation's business divisions and ICT teams work together to achieve business goals" (Microsoft, 2010).*

In general, Governance defines the people, processes, policies and technology that deliver a service as illustrated in figure 2.3. Governance is also the system that ensures the fit between the organisation's mission and its performance. In essence, governance is about being in control and taking overall responsibility for the work and actions of an organisation (Pound, 1995).

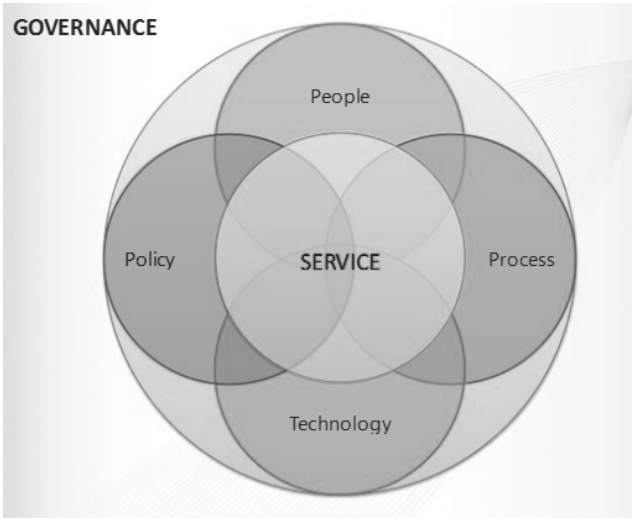

Figure 2.3: A model of governance (Source: Adapted from Microsoft, 2010, p. 7)

Governance applied at corporate level affects projects through its impact on the behaviour of people. Thus it needs to be implemented through a framework that guides managers in their daily work of decision making and action taking. In PG implementation is often defined in terms of policies, processes, roles and responsibilities. This allows for a smooth integration between organisation-wide, general processes and the specific sub-processes related to projects. Governance is at a broader or high level and concentrates on performing and transforming ICT to meet current and future demands of business and customers. ICT management, being narrower, focuses on the management of ICT present operations and on the efficient and effective internal supply of ICT services (Müller, 2009).

However, governance is also often being misused to describe processes and activities that should be actually described as management, not governance. Management is the group of people who are given the authority to achieve the desired results (Pound, 1995). Management is focused on the effective and efficient internal supply of ICT services and products and the management of current ICT operations (Weill & Ross, 2004). Management decisions change as strategies change.

The difference between the concept of governance and the concept of management is illustrated in Figure 2.4. Van Grembergen and De Haes (2008, 2009) show that governance is the creation of a setting in which others can manage effectively while management is the making of operating decisions.

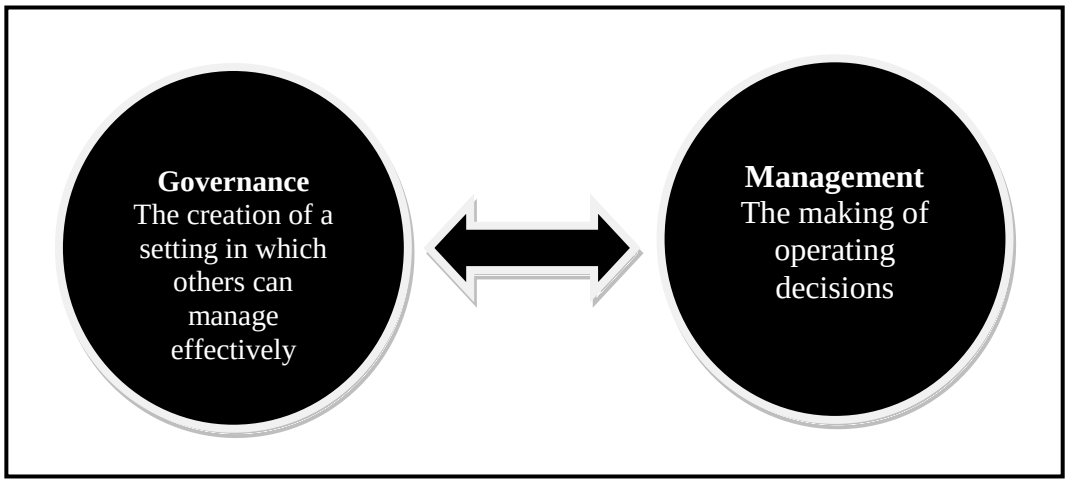

Figure 2.4: Governance versus management (Source: Adapted from Sohal and Fitzpatrick, 2002; Cited in Van Grembergen and De Haes, 2008, p11)

In a discussion paper released by the World Bank in 1991 (World Bank, 1991) governance is described as the "exercise of authority, control, management, the power of government" which is subsequently adopted for the bank's purpose defined as the managing of the economy and the resources of a country. When governance is applied to organisations and particularly when related to ICT systems and processes, the ITG Institute assigns the responsibility to the board of directors and the executive managers. The board of directors must ensure that there are leadership, organisational structures and processes put in place. This will ensure that the ICT in the organisation upholds and develops the organisation's strategies and objectives (ITGI, 2003).

One of the key focuses of ITG according to Grembergen (2008) is to align ICT with business objectives. In other words, ITG is the mix between CG and ICT management. ICT management is focused on the effective and efficient internal supply of ICT services and products and the management of present ICT operations. ITG, in turn, is much broader. It concentrates on performing and transforming ICT to meet present and future demands of the business as internal focus and business customers as external focus. In figure 2.5, Peterson (2004) can be used to describe the relationship between ICT management and ITG.

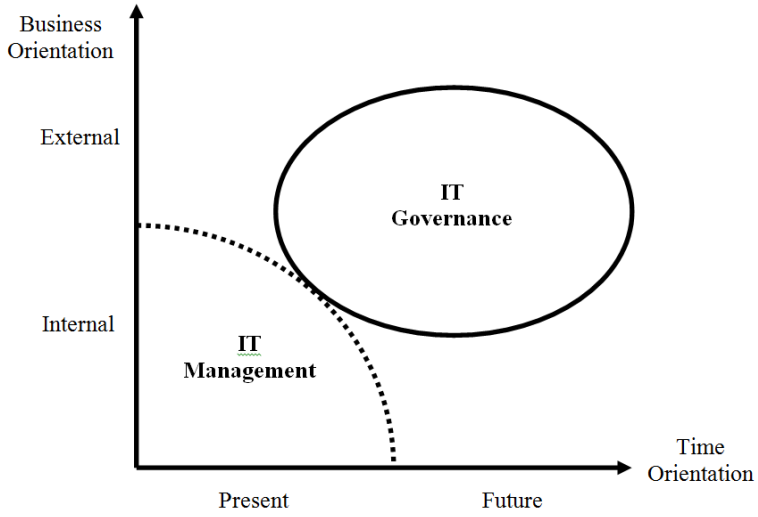

Figure 2.5: Positioning of ITG and ICT Management. (Source: Adapted from Peterson, 2004; cited in Grembergen, 2008, p10)

The difference between them could help provide a better understanding of ITG, as confusion can occur easily. Weill and Ross (2004) maintain that governance determines who should make decisions and management is the process of making and implementing the decisions.

Implementing ITG is as important as having ICT management processes and the greatest value is for strategic alignment. If a parallel is drawn to a plant, ITG can be seen as knowing what type of plant seed to use during what season, what soil to plant it in and how to maintain the plant in the long term. ICT management is to actually plant the seed into the soil and keep watering the plant in order for it to flourish. The distinction between governance and management is taken into consideration in the existing AS 8016 standards framework.

ITG is also the link between ICT and the current as well as future business goals, visions and objectives. The link is influenced by the processes of governance and management that are influenced by business orientation and the presence of a time frame for the objectives given by the business. ITG has a wider time aspect while ICT management has a tighter time frame. This is due to ITG being extensive and focusing on the performance and the transformation of ICT according to the present and future requirements of the business and business customers. In contrast, ICT management focuses on the management of ICT present operations and the efficient and effective internal supply of ICT services (Van Grembergen, 2008).

The term “governance” refers to the system for directing and controlling an organisation (Toomey, 2009). For instance, Van Grembergen (2008) shows that ITG can be seen as knowing what type of seed to use during what season, what soil to plant it in and how to maintain the plant in the long run.

In comparison, management is responsible for maximising profits and shareholder value in the organisation. It is also responsible for day-to-day operations of the organisation and reports to the director. In other words, management is to plant the seed into the soil and keep watering it in order for the plant to blossom.

However, this is an aspect taken into consideration in the diverse existing frameworks. Although the different frameworks focus on different aspects, having good ITG is maintained with good ICT management. Both of them share common drivers of organisational direction, transparency and accountability but their nature and purpose are different. Basically, this means governance is what governors do and management is what managers do.

Young (2006) explained that PG is about increasing the project’s success rate. PG is about providing a scheme for directors and top management to exercise effective supervision and ensure their strategies are implemented as well as their benefits realised. It is a set of management systems, rules, protocols, relationships, and structures. It provides the framework according to which decisions are made for project development and implementation to achieve the intended business or strategic motivation (Bekker & Steyn, 2009). Project management, on the other hand, is defined in the PMBOK Guide (PMBOK ® Guide, 2009) as:

> *“... the application of knowledge, skills, tools and techniques to project activities to meet project requirements. In other words, it involves planning, organizing, monitoring and controlling the project activities in order to accomplish the project requirements.” (PMBOK ® Guide, 2009, p. 37)*

Project management is the leadership function. This includes guiding the work definition, resource costing, scheduling, planning, status reporting and problem solving for the project to reach its objectives. Project management relates to managing the set of tasks and milestones within schedule, allocating and managing the resources and deliverables of the team within the committed schedules.

2.4 PROJECT GOVERNANCE FRAMEWORK

Project governance (PG) is the framework which ensures the project has been correctly perceived. The project is being achieved in accordance with best project management practice. An appropriate PG framework helps saves time and money by avoiding unnecessary rework. There are many PG frameworks developed for the market and five of these frameworks will be described in this section to highlight the focus and purpose of each framework with respect to implementation of PG. These PG frameworks are: AS8016, ITIL, COBIT, PRINCE2 and PMBOK. The frameworks have different approaches to what to focus on during implementation of effective ICT processes (i.e. the frameworks' guidelines and perspectives differ).

2.4.1 AS/NZS 8016

AS/NZS 8016 is a short document with 16 pages and sets out a model and principles for PG. AS/NZS 8016 is the system by which projects that involves investment in changed or new ICT capability are directed and controlled from initiation to the achievement of the business outcomes.

2.4.1.1 Overview of the framework

The framework AS/NZS 8016 that relates to the corporate governance of projects involving information technology investments. It was published as an interim Australian and New Zealand standard in February 2010 following the model established by AS 8015 and the current ISO 38500 (SAA, 2010). It is designed to be used by directors and those who advise them.

This standard makes it clear that the governance supervision must continue until the intended business outcomes have been achieved. If a business outcome can't be met the project must be stopped immediately. AS/NZS 8016 focuses on the governance of projects in which ICT is an enabling tool for delivering value to the business. This value includes creating a competitive advantage through the delivery of new services, enhancing organisational efficiency, and reducing costs and risk. The standard helps to improve business outcomes for any ICT projects relates to business whether it is new investment or the business is changed by ICT capabilities. Inside AS/NZS 8016, the model and principles presented in ISO

38500 are carried over and improved in the specific context of projects as illustrated in Figure 2.6.

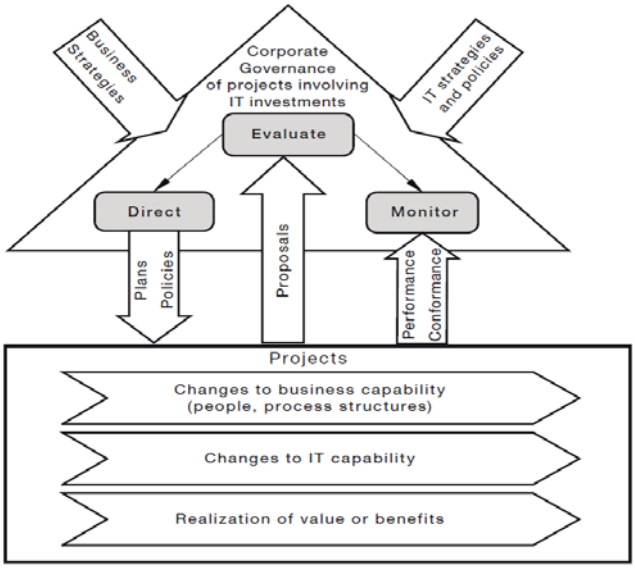

Figure 2.6: Model for Corporate Governance of Projects involving ICT Investment (Source: Adapted from SAA, 2010, p. 10)

This standard provides a framework with six guiding principles for good CG of projects involving ICT investment. The principles are expanded upon by more in-depth discussion on their meaning in the context of projects presented in Table 2.1.

Table 2.1: Six principles for Good Corporate Governance of Projects involving ICT Investment (Source: SAA, 2010, p. 15)

Principles	**Descriptions**
Principle 1: Responsibility	The responsibility for realisation of value from projects involving investment in ICT is defined with understood and accepted roles for the governance and management of projects. This includes project prioritisation and selection, oversight and management of project activities, including business change and realisation of benefits.
Principle 2: Strategy	The organisation's strategy maximises the potential for success from projects involving investment in ICT.
Principle 3: Investment	Investments in projects are made for valid reasons, on the basis of appropriate and on-going analysis, with clear and transparent decision making to ensure projects and project priority contribute

	to business strategy.
Principle 4: Performance	Each project is managed to achieve the agreed outcomes while managing risks to the organisation.
Principle 5: Conformance	Each project conforms to external regulations and internal policies.
Principle 6: Human behaviour	Each project demonstrates a respect for human behaviour in the planning and management of activities and in the resultant deliverables and their use in the changes to business processes.

The six principles express preferred behaviour, which can be considered in the organisation's chosen process model to promote consistent and appropriate behaviour in respect to each process. The directors can monitor, evaluate and direct and the use of ICT in their project based on the above six principles. They can guide and influence behaviour and decision making by establishing policies that correlate to each of the six principles (Chaudhuri, 2011).

The standard also reinforces the use of the term "project" in its generic context, as an organised undertaking intended to produce an outcome. This is the language and context that are widely used in the boardroom and generic conversation about major investment undertakings; it helps to avoid the confusing narrow technical terminology of the ICT community. The governance of projects involving ICT investments should be undertaken within the context of CGIT, with proposals for new projects considered in the context of both business strategies and ICT strategies. It is a framework that assists those at the highest level of organisations to ensure that investments in ICT contribute positively to the performance of the organisations (SAA, 2010).

2.4.1.2 Benefits and challenges

The benefit of the standards is that accountability is clearly assigned for all ICT risks and activities. The challenge is that there are fewer practical utilities. The advantage of having this mechanism is not that targets will cease to change, but that senior management will have earlier warning and have more opportunities to cancel projects if circumstances change and make projects unviable.

2.4.2 ITIL

The Information Technology Infrastructure Library (ITIL) is an IT Service Management (ITSM). It provides guidance on how to convert innovative ideas and concepts into customer services, effective problem solving and permanent solution. It is a collection of best practices with an ICT operational focus and has become the most widely used reference for ICT Service Management (OGC, 2007b).

2.4.2.1 Overview of the framework

ITIL was originally developed in the late 1980s by the Central Computer and Telecommunications Agency (CCTA) in the UK. CCTA developed the government ICT infrastructure management framework to reduce cost and to manage ICT service delivery better (Sallé, 2004). Since 2000, the ITIL framework has been included within the Office of Government Commerce (OGC) (Wagner, 2006).

The first version of ITIL (ITIL v1) promoted efficient and cost-effective ICT operations within government-controlled computing centres (Sallé, 2004). ITIL v1 consisted of a library of 31 associated books covering all aspects of ICT service provision (OGC, 2007a). It was then revised and replaced by seven closely related books and consolidated an overall framework as the second version of ITIL (ITIL v2) between 2000 and 2004. Many organisations have been using this version as the basis for effective ICT service provision. However, ITIL v2 was replaced by an enhanced and consolidated third version of ITIL in 2007. This latest version has been refined into five core books. These five books contain strategy, design, transition, operations and continuous process improvement. It provides a more holistic perspective on the full life cycle of services, covering the entire ICT organisation and all supporting components needed to deliver services to the customer, whereas ITIL v2 focused on specific activities directly related to service delivery and support (Pollard and Cater-Steel, 2009).

ITIL v3 published in 2007 were revised. ITIL 2011 was introduced in 2011. ITIL 2011 is an update to the ITIL framework that addresses significant additional guidance with the definition of formal processes which were previously implied but not identified, as well as correction of errors and inconsistencies. While ITIL v2 remained strongly focused on basic IT operations, ITIL 2011

emphasises the concept that IT is a service that supports business goals. ITIL 2011 was consists of five core publications – Service Strategy, Service Design, Service Transition, Service Operation and Continual Service Improvement. The ITIL 2011 "Service Strategy" does cover the strategic impact of ICT and the relation between ICT and the business.

The ITIL certification is based upon the principles of service management and takes a bottom-up approach. The ITIL certification scheme offers a modular approach. Each qualification is assigned a credit value; so that upon successful completion of the module, the candidate is rewarded with both a certification and a number of credits. These certifications help improve the skills required to deliver high quality, repeatable, and well-controlled ICT services.

In general, any ITIL implementation discussion eventually has its roots in the principle of Process Improvement. ITIL is a set of "good practice" guidance for ICT practitioners to follow. ITIL has its highest adoption rate by private and public organisations in Australia and Europe (Wagner 2006). For instance, these familiar high-profile organisations included ITIL in their IT service management strategies such as IBM, Shell, and Boeing (Sallé, 2004).

An organisation that has implemented ITIL guidance in IT Service Management (ITSM), may however, be able to achieve compliance with and seek certification under ISO/IEC 20000. ISO 20000 is in fact based upon an original pair of documents, BS15000-1/2, which were published by BSI in 2002 and 2003 respectively (Galup, Dettero, Quan, & Conger, 2009). However, ISO 20000 does not offer specific advice on how to design processes. It is rather a set of requirements which must be met in order to qualify for certification. This is where ITIL is important: ITIL (especially the latest new version 3) is strongly aligned with ISO 20000 and it offers a rather detailed collection of best practices which are a good basis for designing ISO 20000 compliant processes.

The goal of ITIL is the direction of ICT services to current and future requirements of the business and its customers, to improve quality of service and to reduce long term cost of service activities (Wagner, 2006). It is to provide value to the business in an ongoing and cost-efficient manner. By focusing on how a process should be carried out, knowing well what the process is would be an advantage. Thus, ITIL describes what IT organisations should do, but not how to do it.

2.4.2.2 Benefits and challenges

Adoption of ITIL for projects implementation helps make the crucial shift from focusing energies inward for resolving technical issues, to placing more attention to customer requests by delivering quality solutions and aligning with business objectives. It improves customer satisfaction through a more professional approach to service delivery, standards and guidance, and improved productivity (OGC, 2007a). The ITIL implementation of a project can save a tremendous amount of money once implemented through the guidelines and best practices included in the library. The ITIL project develops a clearer structure, becomes more efficient, and more focused on the corporate objectives.

One reason for creating ITIL V3 was to achieve better alignment with the ISO 20000 standard. The principle of continual improvement has found its way into the ITIL books, and the processes of ITIL V3 2007/ ITIL 2011 and ISO 20000 are very much in line. For instance, there is an Information Security Management process in ITIL V3, as required by ISO 20000 (Galup, Dettero, Quan, & Conger, 2009).

However, the ITIL guidelines can be challenging to understand and interpret. For example, since ITIL guidelines are not designed to provide definitive implementation advice, Project managers may begin their ITIL journeys without fully understanding their ITIL goals and how to achieve them (OGC, 2007a). Also, doubt within a project may present issues. This means implementing ITIL to fit any projects will cause instant conflict with other project teams that already have such solutions in place as part of their own best practice framework. Besides, ITIL does not cover the strategic impact of ICT and the relation between ICT and the business.

2.4.3 COBIT

Control Objectives for Information and related Technology (COBIT) was first developed as a framework for performing ICT audit assignments by the Information Systems Audit and Control Foundation (ISACF), the research institute of the Information Systems Audit and Control Association (ISACA) in the late 90s. ISACA later changed its name to the ITG Institute (ITGI) (Van Grembergen & De Haes, 2008; ITGI, 2007). COBIT helps to define what should

be completed for service management purposes. The COBIT's framework is available for download on the Web with site registration.

2.4.3.1 Overview of the framework

The COBIT 4.1 was introduced in 2007 and consists of 34 high-level ICT processes that come under four different control stages in the life cycle of Information systems. The four domains are Plan and Organise (PO), Acquire and Implement Automated Solutions (AI), Deliver and Support (DS), and Monitor and Evaluate (ME). Each domain describes a set of control objectives and defines business processes that should be used and also control processes that will help to manage and control the complexity of the ICT structures as well as the rapid change that occurs in the ICT environments (Debreceny, 2006).

In 2012 COBIT 5 was launched.. COBIT 5 is designed to be a single integrated framework that can be used for both governance and management. COBIT 5 outlines the involvement and responsibility from a business point of view rather than from the technical point of view. COBIT 5 found in ISACA (ITGI, 2012) defines governance as:

> *"Governance ensures that stakeholder needs, conditions and options are evaluated to determine balanced, agreed-on enterprise objectives to be achieved; setting direction through prioritisation and decision making; and monitoring performance and compliance against agreed-on direction and objectives." (ITGI, 2012, p. 14)*

This definition is different from the previous versions of COBIT as the focus is to recognise multiple stakeholders of organisational ICT as well as the balance of resource distribution while maintaining overall organisation goals. It also clearly states what activities to do. In comparison to version 4.1, there is no mentioning of leadership, structures and processes in COBIT 5. COBIT 5 proposes five COBIT principles which guide the governance of ICT: Meeting Stakeholder Needs; Covering Enterprise End-to-end; Applying a Single, Integrated Framework; Enabling a Holistic Approach; and Separating Governance from Management (ITGI, 2012).

The purpose of COBIT is to provide extensive guidance to ensure the alignment of ICT and business objectives by defining a set of processes ranging from strategy to operational development and support. It provides the means to

evaluate process maturity, and to maximise benefits while reducing risk. The primary focus of COBIT is the alignment of the use of ICT with business strategies to achieve the organisational goals (Ridley et al. 2004). COBIT is a supporting toolset that allows managers to bridge the gaps amongst business requirements, control needs, technical issues and business risks. It is a control model that meets the needs of ITG and ensures the integrity of information and information systems.

2.4.3.2 Benefits and challenges

COBIT as an Information Technology Governance (ITG) framework addresses management concerns about better project control, minimising project risk, measuring project performance against standards. Organisations apply the COBIT framework at the institutional level. The COBIT's framework provides a well-managed and flexible ICT environment in an organisation. COBIT provides a controlled environment that is responsive to business needs and serves management and audit functions in terms of their control responsibilities. It provides tools to help manage ICT activities and focus on the processes of the ICT project and how their performance can be assessed and monitored.

However, there is very little support given to the arrangement of decision rights within the organisation. The ICT department is under a lot of pressure to meet the business goals for their organisation (Bekker & Steyn, 2009). The challenge can be particularly daunting because it involves complying with regulations especially when using one or two standards (i.e. ITIL and AS8016) together to run a project. Compliance requires strong CG capabilities that are demonstrable to outside auditors. Because ICT plays such a major role in business processes, the ICT department creates complexity for the business, but at the same time, it provides the means to demonstrate this compliance. Organisations rely on guidelines such as COBIT to help understand and address these challenges.

2.4.4 PRINCE 2

Projects in Controlled Environments (PRINCE2) is a project management method covering the organisation, management and control of projects. PRINCE2 is now owned and maintained by the Office of Government Commerce (OGC).

2.4.4.1 Overview of the framework

PRINCE was originally based on PROMPT, a project management method created by Simpact Systems Limited in 1975. PROMPT was adopted by the Central Computer and Telecommunications Agency (CCTA) in 1979 as the standard to be used for all Government ICT projects. When PRINCE was launched in 1989, it effectively outdated PROMPT within Government projects.

Although PRINCE was originally developed for the needs of ICT projects, the method has also been adopted for many non-ICT projects. Thus the PRINCE method has been improved and PRINCE2 was published in 2006. Later PRINCE2 version 1 appeared and version 2 was developed in 2009. Instead of PRINCE3, the name "PRINCE2" is kept to indicate that the method remains faithful to its principles. However, the main difference between the 2009 version and earlier versions is that now there are two manuals: Managing Successful Projects with PRINCE2-2009 Edition and Directing Successful Projects with PRINCE2-2009 Edition.

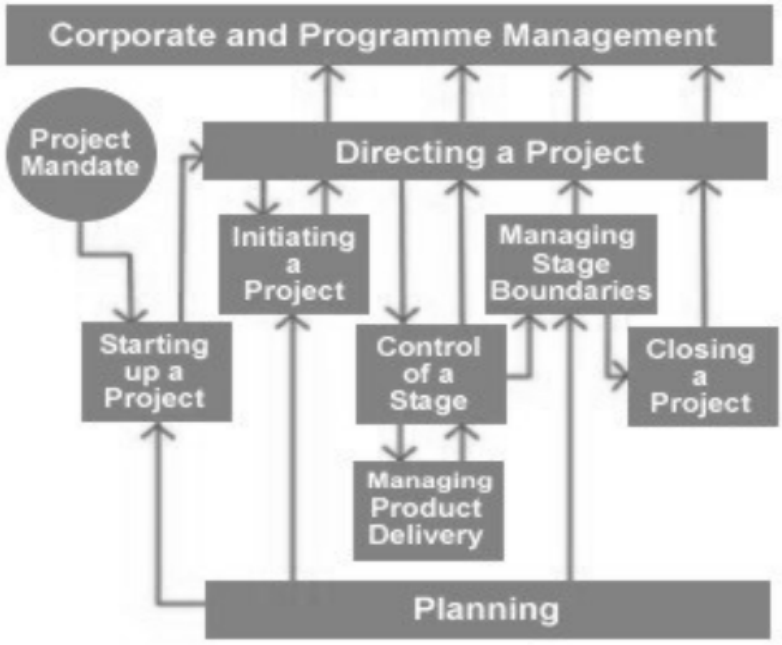

Figure 2.7: PRINCE2 Process Model (Source: Adapted from Siegelaub, 2004, p. 3)

PRINCE2 is a process-based approach for project management providing an easily tailored and measurable method for the management of all types of projects. PRINCE2 is divided in 8 major processes as shown in Figure 2.7. Each process is defined with its key inputs and outputs together with the specific objectives to be

achieved and activities to be carried out. PRINCE2 covers the concepts and processes of how to organise the people and activities in a project, how and when to plan, monitor and control the project, and what to do if things don't go according to plan (Bentley, 2009).

The processes have a consistent order and begin with the starting up of a project (SU). SU is designed to ensure that the pre-requisites for initiating the project are in place. Starting up a project should be very short and that is followed by the Initiating a project (IP) process. IP creates a solid foundation for achieving project success through the identification of project objectives and business benefits. It also instructs the team to tailor project plans and invoke governance over project activities. Subsequently, controlling a stage (CS) provides guidance to the Project manager in managing the project on a day-to-day basis. This includes work authorisation and receipt of the work; issue and change management; status collection, analysis and reporting; viability consideration; corrective action; and escalation of concerns to the project board and other resources. It is iterative and is repeated for each developmental stage of the project. Managing product delivery (MP) is part of PRINCE2's work authorisation system. It is the system for the performers of technical work such as teams or contractors to agree to work to be performed, progress report and work completion. This is to ensure that planned products are created and delivered. Managing stage boundaries (SB) deals with the transition from the completion of one work stage to the commencement of the next stage. It will provide the Project Board with key decision points on whether to continue with the project or not. Closing a project (CP) is the process that transitions the project back to the organisation. The process covers the Project Manager's work to wrap up the project either precipitated or at premature termination. Most of the work is to prepare input to the Project Board to obtain its confirmation that the project may close. One of the remaining two processes, directing a project (DP), runs from the start-up of the project until its closure. This process is the framework for supplying input to the project manager, receiving requests from the project manager for information and assistance and decision makings. The Project Board manages by exception, monitors via reports and controls through a number of decision points. Planning (PL) is the common process for several other processes in PRINCE2.

Each process breaks down into between three and nine sub-processes which describe the actions that should be taken to fulfil that step of the project in more details. PRINCE2 has a total of 45 sub-processes. Each project that runs under PRINCE2 should include all eight processes in some fashion. Despite that, since each project is unique, organisations should carefully examine and evaluate the methodology and tailor it to the specific project needs (Bentley, 2009).

2.4.4.2 Benefits and challenges

PRINCE2 is more specific and requires an accountable project board to own the project. This ensures commitment to complete the job. At the same time, the project board grants authority to the project manager by unambiguously committing resources as the project progresses (Bentley 2009). PRINCE2 provides a complete change control approach where it recommends identifying, updating and reviewing issues during the execution process (controlling stage) and at the completing of each stage (Manage Stage Boundaries). This is to ensure no project methodology could qualify for maturity without solving the management system issues. PRINCE2 enables projects to have good communication channels between the project, project management, and the rest of the organisation.

People who work on a PRINCE2 project must be familiar with every aspect of PRINCE2 to know how to run the project. However, in many cases, there are not enough trained people available. It is very expensive for an organisation to train everyone involved in a project to do PRINCE courses. The drawback is that there are a lot of documents and lists that have to be written when using PRINCE2. Since Project managers only have to inform the Project board about the status of the project, they can easily blame other project groups when something goes wrong. Splitting up a PRINCE2 project often results in a lack of knowledge of the project by responsible persons like the Project manager. Also it's not useful to make use of expensive Project managers when the only work they have to do is to administrate and inform the Project board.

2.4.5 PMBOK

Project Management Body of Knowledge (PMBOK Guide) is a guide book which presents a set of standard terminology and guidelines for project management.

2.4.5.1 Overview of the framework

The PMBOK Guide is not strictly a project management methodology like PRINCE2 but more of a process-driven guide. It provides the information required to develop individual methodologies. It was first published in 1987 by the project management institutes (PMI). The latest publication was version 4 published in 2009. PMI describes the PMBOK as "the sum of knowledge within the profession of project management" (PMI, 2009). When establishing their own project management methodology, organisations should use a "PMBOK ® Guide" published by the PMI to identify the best practices in project management.

The PMBOK ® Guide is structured into three different areas. These are: the project management framework, the standard of project management and the project management knowledge areas. The PM framework is the first area which provides a basic structure for understanding PM (PMI, 2009), while the standard of PM of a project specifies all the project management processes that are used by the project team to manage a project (PMI, 2009). A third area would be the recognised by PMBOK Guide five basic groups of processes and nine knowledge areas. The five basic processes include initiating, planning, exercising, controlling and monitoring and closing. The nine knowledge areas recognised in the PMBOK Guide are" project integration management, project scope management, project time management, project cost management, project quality management, project human resource management, project communications management, project risk management and project procurement management. The PMBOK Guide also identifies 44 processes that each belong to one basic group and one knowledge area. The result is a matrix representation that links processes, basic groups and knowledge areas.

2.4.5.2 Benefits and challenges

In the PMBOK Guide, the goal is to provide project results, on-time and under budget, that meet the needs of the customer. PMBOK refers to project sponsor and suggests the role that a project sponsor should be playing in supporting the project. PMBOK is process-oriented and provides a general project management framework in the form of process groups and knowledge areas. It defines for each process the necessary input, tools, techniques and output deliverables. PMBOK

gives a concise summary of and reference to generally accepted project management principles. It proposes a unified project management terminology.

When it comes to resolving issues, PMBOK makes reference to the existence of issues that need to be managed. But there is no mechanism or approach for managing them. PMBOK considers their management to be outside of its scope. PMBOK is only a framework; the actual needs of the project in question should be determined by a knowledgeable managerial team. PMBOK has to be adapted to the application area industry, project size and scope, time and budget and quality constraints. PMBOK provides minimal coverage of various project management methodologies and techniques. One has to consult specialised texts on these subjects in order to learn the details. The PMBOK is only concerned with a project plan.

2.5 PROJECT GOVERNANCE IMPLEMENTATION MECHANISMS

Organisations implement their governance arrangements through a set of governance mechanisms. Weill and Ross (2004) state that “well designed, well-understood, and transparent mechanisms promote desirable ICT behaviours”. This means an organisation would improve the efficiency and effectiveness of performance of an ICT project as well as achieve its organisational goals if good mechanisms are put it placed. In other words, if mechanisms are under-implemented, then the project governance arrangements will fail to yield the desired result.

Likewise, De Haes and Van Grembergen (2010a; 2010b) showed that organisations can and do deploy EGIT by using a mixture of structures, processes and relational mechanisms. Enterprise governance of ICT structures includes organisational units and roles responsible for making decisions. It is about enabling contacts between business and ICT management decision making functions. Processes are concerned with ensuring that ICT project decisions made to support the organisation goals. This is also to ensure that daily behaviours are consistent with policies and provide input back to decisions. Finally, the relational mechanisms are about the active participating of and collaborative relationships between corporate executives, ICT management and business management.

Microsoft (2010) also adapted similar governance framework as mentioned in section 2.3 to deliver services. The governance framework comprises of people, processes, policies and technology. It guides, directs and controls how an organisation's business division and ICT teams work together to achieve their business goals.

On the other hand, PMO is an organisational entity which is "assigned various responsibilities related to the centralised and coordinated management of those projects under its domain" (PMI, 2004). Aubry, Hobbs, and Thuillier (2007) write that "the Project Management Office (PMO)" is part of a network of complex relations that links strategy, projects and structures". In an effort to improve the effectiveness and consistency of project management, many organisations establish a formal PMO that provides expertise as needed. In some organisations, the PMO operates as an advisory group to project managers, who report directly to business units. In other organisations, project managers report directly to the PMO and are assigned to projects on a case-by-case basis.

Furthermore, Leavitt (1964:1150 cited in Toomey, 2009) proposed that PG can be implemented through a framework by adapting the diamond model of organisational change. Leavitt's model proposes a similar framework that comprises structures, processes, people and technology. These four elements interact to make a business system operate. By tuning the individual elements and adjusting their interactions, business systems can be adjusted in many dimensions such as reliability, cost and adaptability.

One of these four elements, the technology mechanism, was not mentioned in the research of De Haes and Van Grembergen (2010) and Weill and Ross (2004). Toomey (2009) commented that the organisation uses ICT to enable people, processes and structures to be arranged in new, more effective and more reliable ways, with greater capacity and greater availability to understanding the role of ICT in support of the business. In other words, it provides enabling capabilities, to transform, perform, control and numerous other features that are essential for any modern business. Organisations can treat technology as the driving force of change. This means the main attention goes to the technology mechanism and there is an expectation develops that the people, process and structure mechanisms of the system would adapt to the new technology. Toomey (2009) suggested that it is beneficial to briefly discuss a few aspects of the way

that technology enables and requires attention to complementary changes in the other three mechanisms.

Apart from technology, these authors have also named their mechanisms slightly differently, for example Weill and Ross (2004) use “communication” whereas De Haes & Van Grembergen (2009) uses “relational”, and so does Microsoft (2010) while Toomey (2009) uses “people”. Besides, PMO relates to structure, people and processes. All in all, the main beliefs and concepts remain the same. Given the three mechanisms outlined in the PG implementation, this research study sets out these three different types of mechanisms as main focus areas in the PG implementation. There are the structures, processes, and people as shown in Figure 2.8. The structures identify who are responsible for making ICT project decisions and the processes is to ensure ICT project decisions support the organisation goals. Finally, the structures and processes are designed to focus on understanding of the people who are in the project.

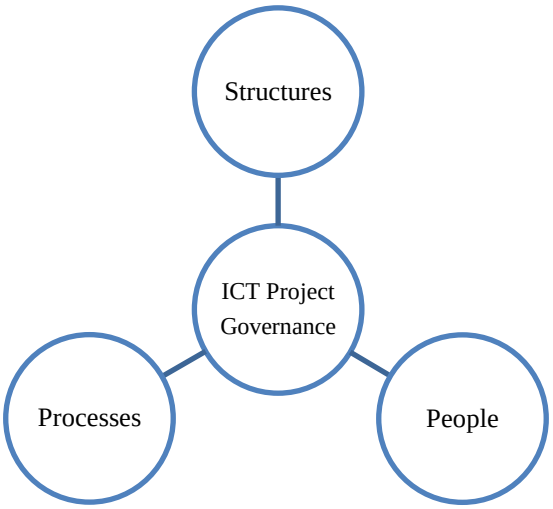

Figure 2.8: PG Implementation Framework (Source: Adapted from De Haes and Van Grembergen, 2010, p. 5)

2.5.1 Structures

Structure is a vital aspect of business organisation but it is not only about the organisational structure as represented in an organisational chart. The structure mechanism identifies who are responsible for making project decisions provides boundaries for operations and authority for decision making (Toomey, 2009). Better decision making structures in ICT projects result in better implementations (Weill & Ross, 2004).

When an ICT project is used to enable new business capabilities, there can be a dramatic impact on structure in many ways. An example would be an airline deciding to invest in a fleet of Airbus 380 aircraft. There are many decisions to be considered such as airlines have to work with airport authorities to upgrade infrastructure, to provide wider runways with greater weight-bearing capacity, develop new crewing structures, restructure routes and schedules, upgrade various ICT systems to accommodate increased passenger capacity and new seating configurations. The entire project implementation involves major organisational changes and process changes at the strategic, management, and operational levels. This amount of changes requires that an organisation understands the business impacts and is prepared to make tough decisions. The failure of Airbus 380 project was not related to technical problems or the project manager's roles and responsibilities. As according to Gauthier-Villars and Michaels (2007) indicated that top management was to be blamed due to overly complex organisational structure that repeatedly making slow decision. Overly aggressive schedules lead to schedule pressure and the key issues were ignored early in the project Lifecycle resulted in significantly higher costs (Gauthier-Villars and Michaels, 2007).

Weill and Ross (2004) use political archetypes (monarchy, feudal, federal, duopoly, anarchy) to describe the combinations of people who have either decision rights or input to ICT project decisions. In a business monarchy decision-making structure, senior business executives make ICT project decisions affecting the entire enterprise. It is usually in the form of executive committees. In some organisations, the CEO works with a small team of top executives to ensure that ICT aligns with business objectives. In an ICT monarchy decision-making structure, ICT professionals make ICT decisions. The feudal decision-making structure is based on leaders in each business unit who each make their own ICT decisions, optimising their local needs. The federal decision-making structures have a long tradition in government. It consists of members from corporate organisations and business units and can include (or not) ICT people. Federal arrangements attempt to balance the responsibilities and accountability of multiple governing bodies such as country or states. Weill and Ross (2009) study showed that approximately ninety percent of the organisations had the involvement of a senior executive committee playing a role in ICT PG. The ICT duopoly decision-making structure is a two-party arrangement where decisions represent a two-

sided agreement between ICT executives and one other group such as project directors. The ICT executives may be a central ICT group or team of business unit ICT organisations. Lastly, an anarchy decision-making structure consists of individuals or small groups that make their own ICT project decisions based only on their local needs. Anarchies are the curse of the existence of many ICT groups and are expensive to support and secure (Weill & Ross, 2009).

Peterson (2004) discusses decision makers and decision rights in terms of centralisation versus decentralisation. The discussion of whether to centralise or decentralise ICT project governance is based on a rational perspective of the organisation, in which choices are reduced to one of internal efficiency and effectiveness. In general, it is assumed that centralisation leads to greater specialisation, consistency, and standardised controls, whereas decentralisation provides local control, ownership and greater responsiveness and flexibility to business needs. However, flexibility under decentralisation may lead to flexible standards, which eventually can result in reducing its flexibility, and specialisation under centralisation suffers risks due to bounded rationality and information overload (Peterson, 2004).

A federal approach towards ICT project governance challenges project managers in local business units to surrender control over certain business-specific ICT domains for the well-being of the enterprise, and to develop business-to-corporate and business-to-ICT partnerships. The potential risk in modern business environments is that both centralisation and decentralisation fit the organisation into a fixed structure. The challenge is therefore to balance the benefits of decentralised decision-making and business improvement and the benefits of central control and ICT standardisation (Peterson, 2004).

Every organisation is involved in ICT decision-making. However, they differ in how thoroughly they define accountability, and how formally they communicate their decision making processes. This focus is on how decisions are made, and who is involved in the decision-making. These are the natural approaches to generating commitment (Weill & Ross 2004).

2.5.2 Processes

Process mechanisms are the next step after decision-making structures in designing ICT project governance. Processes ensure that project decision supports

the organisation goals. The process is concerned with the set of tasks that are undertaken in achieving the outcomes, regardless of the level to which they are automated and how they are sourced. The key processes include the ICT project investment approval, condition process, service level agreement, chargeback, project tracking and formal tracking of business value for ICT (Weill & Ross, 2009).

The ICT project investment approval process has the objective of ensuring that all projects involving ICT investments are significant to the organisation's business strategy. Most organisations validate their project proposal process to ensure that creative ideas and strategic priorities are considered by the investment decision makers. For instance, an ICT project must go through the ICT committee for approval. The ICT committee determines the impact of this ICT project on the organisation. The ICT committee must ensure they have informed oversight of all projects involving ICT investments that are significant to the organisation's business strategy. The main tasks of the ICT committee use standardised ICT approval application templates to estimate metrics such as maximising return on investment from every project, net present value, and risk for each project (Weill & Ross, 2004). The service-level agreements lead to the delivery of the service ICT offers and the cost of the services through the negotiation between the ICT services unit and business units. The communications about business needs and ICT services facilitate decisions that lead to lower costs and better utilisation of ICT resources. Some organisations use chargeback successfully for aligning decisions with infrastructure, business application need and ICT investment with business goals (Weill & Ross, 2004). The purpose of chargeback is to allocate costs so that ICT costs in a business unit reflect the use of shared services while the shared services unit matches its costs to the businesses it supports. Throughout all these processes, the ICT committee must ensure governance responsibilities and authorities are defined, communicated to the organisation and that there is open communication at all levels.

Project tracking is also required. It is a critical procedure to develop the discipline to track the progress of each ICT project. This is to ensure that projects are on schedule and within budget allocations. Directors or senior project managers with the delegated authority for governance of a project should monitor the performance of projects involving investment in ICT and approve plans and

business cases. This includes monitoring the progress, delivery, quality and risks across the portfolio of projects. This is to ensure that reporting mechanisms highlight key issues and risks.

Furthermore, formal tracking of business value is meeting the challenge of measuring the value of ICT. It is another process mechanism that ensures that business objectives are achieved. This process keeps track of the value the organisation receives from ICT. The achievement of business value is enhanced by active involvement from senior management in project decision-making and promotion of the organisational change required to achieve the expected business value.

2.5.3 People

Structure and processes are designed with a thorough understanding of the people who are in the project (Toomey, 2009). In order for these people to play their part more effectively, they need to be educated and developed. The success of every project and the effectiveness of structure depend on the communication approaches by people involved in it.

People use communication approaches to spread information about ICT PG decisions and processes as well as about related desirable behaviours throughout the organisation. Weill and Ross (2004) found that the more management communicated formally about the existence of ICT project governance mechanisms, how they worked, and what outcomes were expected, the more effective was their governance. In other words, if the project manager is not communicating with their project team about the ICT project governance and processes, then the project team will not receive information to help them carry out their tasks and complete their project. This means a project has a lack of effective governance.

Furthermore, projects are often relying on committees of stakeholders to define their requirements, monitor their progress, and identify potential issues. Communication within and across committees align the efforts of the committees with other governance initiatives. Weill and Ross (2004) also suggested that the formal committees in the organisation create communication between committee members. Committees often make lower-level governance decisions and carry out high-level decisions.

Top management is another important aspect to be considered. Announcements from top management clarifying priorities and demonstrating commitment usually get a lot of attention in an organisation. As ICT becomes more strategic in organisations, ICT project governance becomes more important. Developing a communication strategy for senior management to announce and explain new ICT project governance processes helps to achieve the objectives of the governance design. This means the more people use communication, the more information is shared and this means the more effective the governance is.

People in organisations often interpret knowledge as a kind of power (Cress & Martin, 2006). If an organisation allows knowledge to be used as power, this can generate a negative impact on individual status, roles and responsibility and impact on project performance. It is important that project teams share their knowledge between them openly and freely for enabling project completion. Top management should ensure ICT project governance responsibilities and authorities are defined and communicated within the organisation. That is to have open communication at all levels. Information and knowledge are shared and communicated openly for effective project completion.

In addition, people can use web-based portals to share their information and knowledge. Web-based portals can be used for communication around ICT project governance to educate organizational members on ICT project governance processes. This includes specific procedures and policies for mechanisms such as templates for ICT investment proposals, architectural exceptions, and service-level agreements. Announcements and updates can be published through a portal. Web-based portals provide a central communication channel within the organisation. Some portals have examples of ICT investment cases with templates. Other portals have lists of approved ICT software and hardware with instructions on ordering hardware and software. Portals can also support ICT project governance by posting metrics for project-tracking systems.

Clear communication is essential when people who work with projects and provide the connection are dealing with uncertainty. The people mechanisms focus on communicating PG throughout the organisation to ensure that project is understood by everyone.

2.6 BUSINESS VALUE

There are a number of different ways for ICT to add value to the business in an organisation. An important factor to create value from ICT investments is to ensure that ICT strategies and business strategies are aligned (De Haes & Van Grembergen, 2008; Luftman et al., 1999; Sledgianowski et al., 2005). For example, formal tracking of business value meets the challenge of measuring the value of ICT. It is to ensure that business objectives are achieved. The achievement of business value is enhanced by active involvement from senior business management in project decision-making and promotion of the organisational change required to achieve the anticipated business value (SAA, 2010).

To determine the business value of AS8016 the researcher has to look at factors that influence organisation's achievement of its goals if it has adopted the AS8016 framework. As pointed out in section 2.4.1, SAA (2010) promises a lot of benefits and positive factors for an organisation that adopts the AS/NZ8016. AS/NZ8016 focuses on the governance of projects in which ICT is an enabling tool for delivering value to the business. It can create a competitive advantage through the delivery of new services, improved organisational efficiency and reduced cost as well as to reduced risk.

The potential for success is about choosing the right projects. Doing the right projects require the prioritisation, selection and alignment of projects with the organisation’s strategic objectives. Furthermore, the organisation needs to do the project right, making sure it is high quality, on scope, within budget, has reduced risk and is on time. This means an organisation requires an effective PG, structures and management processes to deliver the projects. Most importantly, the organisation needs to ensure active participation of directors and senior managers in the governance of the projects from initiation to the realisation of the benefit (SAA, 2010).

2.7 DEVELOPMENT OF RESEARCH QUESTIONS

The literature review presented in this chapter identifies little research that directly explores how a PG framework can be used to measure the ICT project effectively. PG is mostly normative in nature as it provides considerable advice on

what top management should do and consider with respect to the governance of an ICT project. However, it has little insight on what top management is actually doing. The review of literature identifies a clear gap in the research with respect to the lack of knowledge of how top management governs ICT projects. What is evident from the research is that the AS/NZ8016 framework is recommended for top management use (SAA, 2010). This framework is established and accepted by business and ICT professionals as an appropriate model of PG. Hence the aim of this research thesis is to gain understanding of *"What can top management do in order to improve the PG?"* This determines whether the PG framework is an appropriate theoretical framework for PG.

In order to determine how top managements govern ICT projects, the research will consider whether the existing PG theory (AS/NZ8016 framework discussed in Section 2.4.1) can provide an explanation for the research question. A qualitative study will be conducted to measure the relations between the PG framework and top managements and to form an understanding of their role in the PG. This qualitative research study will consider the views of top management and personnel who are familiar with the PG processes. The literature reviewed in Section 2.4.1 highlighted the use of the PG framework and its components within the PG field reviewed in Section 2.5. The researcher will use the themes from this literature as the basis for the qualitative study presented in Chapter 4. Particularly, literature identifying each component is used for the interview questions and session constructs that examine if top management conceptualise their PG role in the way the AS/NZ8016 framework presents it. This research will determine whether top management applies the theoretical PG framework for how they govern ICT projects by addressing in the qualitative study some research questions that are subordinate to the main question such as "*How does the top management govern ICT projects?"; "What are the factors that could lead to effective PG?"* and *"How important is for the successful project completion that the top management adopt PG framework?"*.

2.8 SUMMARY

The chapter focuses on a review of the relevant literature associated with the effective governance of project involving ICT investment. This chapter provides a

clear understanding of the differences between EG and ITG in terms of their structure, roles and responsibilities in the organisation and how ITG can fit in within the EG structure. It is found that ITG is an integral component of EG whereby ITG should be addressed at the same level as corporate governance and business governance of the organisation. Whereas PG is an integral component of CG whereby allowing both ICT and business people to manage and govern projects effectively and the creation of the business value from ICT-enabled investments. In addition, PG is also an integral component of ITG where PG refers to the rules and regulations under which an ICT project functions.

This chapter further outlines some of the frameworks used for PG such as AS/NZ8016, ITIL, COBIT, PRINCE2 and PMBOK. The AS/NZ8016 framework was derived from those defined in IS/IEC38500:2008 Corporate governance of Information Technology and tailored to clarify the application of ISO/IEC 38500 principles to projects. The focus is on governance of projects involving ICT investment and for ensuring the appropriate behaviours and mechanisms are in place and deliver value to the business within the organisation. To do this, the AS/NZ8016 framework provides principles and a model that delivers those ICT-enabled business investments to achieve ICT goals as well as business goals. Likewise, a COBIT framework focuses on the execution and delivery of ICT-enabled business investments of the organisation. The COBIT framework provides a process model that aligns the use of ICT with business strategies to achieve the organisational goals. On the other hand, the ITIL framework provides guidelines and best practices for the ICT service management to help improve customer satisfaction, enterprise productivity, the use of skills and experience of ICT services through the use of best practice processes, and reduce costs. ITIL identifies project issues which reduces the risk of failure and helps to achieve higher levels of control and performance in the project. PRINCE2 is a process-based approach for project management providing an easily tailored and measurable method for the management of all types of projects. This is more specific for a project board and a project board is required to own the project, helping to ensure their commitment to complete their job. PRINCE2 enables projects to have a good communication channels between the project managers, project team, and the rest of the organisation. In contrast, the PMBOK is not strictly a project management methodology like PRINCE2 but more of a process-

driven guide that provides the required information to develop individual methodologies. PMBOK is a model for assessing the maturity level of ICTG processes in the organisation. PMBOK is process-oriented and provides a general project management framework in the form of process groups and knowledge areas. The goal of PMBOK Guide is to provide project results, on-time and under budget, that meet the needs of the project sponsor; it also suggests the role of project sponsor should be in supporting the project.

This chapter gives a lead into identifying areas in which the possible factors for the adoption of AS/NZ8016 framework can be found. Effective PG is essential for projects. An effective PG implementation can be organised through a mixture of various structures, processes, and people mechanisms as shown in the PG implementation framework presented in figure 2.8 and based on the research findings by Van Grembergen and De Haes (2008), Toomey (2009) and Weill and Ross (2004). Structures outline the positions of responsibility for decision-making and who should occupy those positions. This is often referred to as the allocation of decision-making rights (Weill and Ross, 2004; De Haes & Van Grembergen, 2008; Toomey, 2009). Processes include all manner of formally adopted processes, procedures, and methodologies that help decision-makers both make and implement decisions. The ITGI, through their increasingly popular, comprehensive governance framework, COBIT, offers a highly prescriptive set of mechanisms with a focus on audit control (De Haes & Van Grembergen, 2008). Whereas the people mechanism provides an explicit link between communications and project decision-making, information enables senior management to formally spread their views on decision guidelines and constraints (Weill & Ross, 2004). It promotes efficient communication between stakeholders, management and the project manager. This ensures that potential issues and conflicts are identified and addressed on time.

With an effective PG and business value creation, the researcher has to look at factors that influence organisations and achievement of goals if the organisation is to adopt the AS8016 framework. This ensures that ICT strategies and business strategies are aligned. In Chapter 3 a methodology is specified to answer the most important questions related to PG.

Chapter 3

RESEARCH METHODOLOGY

3.0 INTRODUCTION

In Chapter 2 a review of relevant literature was made to understand the scope of project governance (PG) and to identify relevant problem domains. In previous chapter a researchable question has to be formulated and then a methodology developed to answer the research question in this chapter. The methodology used to conduct the research must be chosen and justified in order to provide a systematic basis for accepting or refuting asserted propositions. The steps for gathering empirical data, processing and analysing data will be defined. The research approach and research design issues will be discussed and the data collection techniques justified. This chapter sets out how a qualitative study allows the researcher to gain a deeper understanding of how top management govern ICT projects.

The research question is *"What can top management do in order to improve the PG?"*. Moreover, this research will determine whether top management applies the theoretical PG framework for governing ICT projects by addressing a set of subordinate research questions. These sub-questions are: *"How does the top management govern ICT projects?"; "What are the factors that influence effective PG?" and "How important is for the successful project completion that the top management adopt PG framework?"*.

Chapter 3 aims to develop a research methodology that can help answer the research question. An exploratory as well as explanatory research approach from a qualitative perspective provides a practical way to perform an investigation. In order to construct a better understanding in the chosen research method, a review of previous case studies that identifies how others have approached similar research questions is presented in section 3.1. Section 3.2 maps out the research process to deliver a clear and structured development of the research steps. Next, section 3.3 discusses research philosophy where the basic assumptions underlying the research are presented. Section 3.4 specifies the research approach used to conduct the research. Section 3.5 confirms the type of research strategy that best

suits this research. Section 3.6 clarifies the research design and how the research questions will be addressed. Section 3.7 justifies the adoption of a preferred method for data collection. A summary of the research methodology is presented in Section 3.8.

3.1 REVIEWS OF SIMILAR RESEARCH

In order to develop the methodology for this research three previous studies from the literature have been reviewed. These studies were chosen because of their similarities with the current research. They have been analysed to identify how other researchers chose, executed and explained their research methodologies. Brief summaries of each study follow.

3.1.1 Study 1

The first study (Tavalea, 2009) was conducted to find out the factors that influence Information Communication Technology Governance (ICTG) implementation. Executive management and senior ICT staff were targeted. The methods for collecting data were unstructured interviews, document collection and diary recording. The unstructured interviews were conducted within a single organisation and were recorded for later transcription. In addition, specific documents related to the research field were collected. The data gathered from the research field were then analysed qualitatively using NVivo. The results showed a factor analysis and an explanation of ICTG implementation in an organisation with a low capability maturity.

3.1.2 Study 2

The second study (Van Grembergen & De Haes, 2009) was an extreme case study that compared how Enterprise Governance of Information Technology (EGIT) was implemented in poorly aligned and highly aligned organisations. In each of these organisations, senior IT and senior business managers were interviewed. Interviewees were asked to assign a maturity score to measure each of the governance practices based on a generic maturity model and the researcher acted as an observer. The interviews were tape recorded and notes taken for analysis after the interviews. Additional data were supplemented such as telephone and email conversations after the interviews and extra internal documentation that was

shared and were collected for analysis as well. The research showed clearly an increase in business and ICT strategy alignment of structures, processes and relational mechanisms. The outcome of this research means that the highly aligned organisations have more mature governance practices. The results indicated that there are several patterns to enable business and ICT alignment.

3.1.3 Study 3

The third study (Willson & Pollard, 2009) which was conducted using a case study approach within one large corporate organisation was based in Australia. There were 23 ICT and business managers who participated in the first round of face to face interviews and following by three telephone interviews were conducted in the second interview which took over six months. Qualitative research methods were used. The data analysis approach was adapted from grounded theory using open, lengthwise and selective coding techniques. This research set out to examine the practical nature of ITG and compare it with the theoretical view of ITG within one large multinational organisation. The factors that impacted on ITG in practice were examined and implications noted for the practice of ITG.

3.2 RESEARCH PROCESS

The review of three case studies in section 3.1, demonstrate that a research process has been carried out to explain where the research is coming from and why the researcher wants to do the research in a particular way. In order to create the intellectual puzzle, the research process is designed to gain insight into the issues underlying the choice of data collection method. The process of the research has a beginning and an end, with many steps in between. Each one of these steps is built upon the foundation of other researchers' work and can be justified by the literature review.

Further readings indicate that a guiding design is necessary. Such a design also helps to break down the research process into phases to make the task manageable. In this instance the research plan is based on the research process model. This model guides the researcher to define the issues underlying the selection of data collection methods (Saunders et al., 2009) as shown in Figure 3.1.

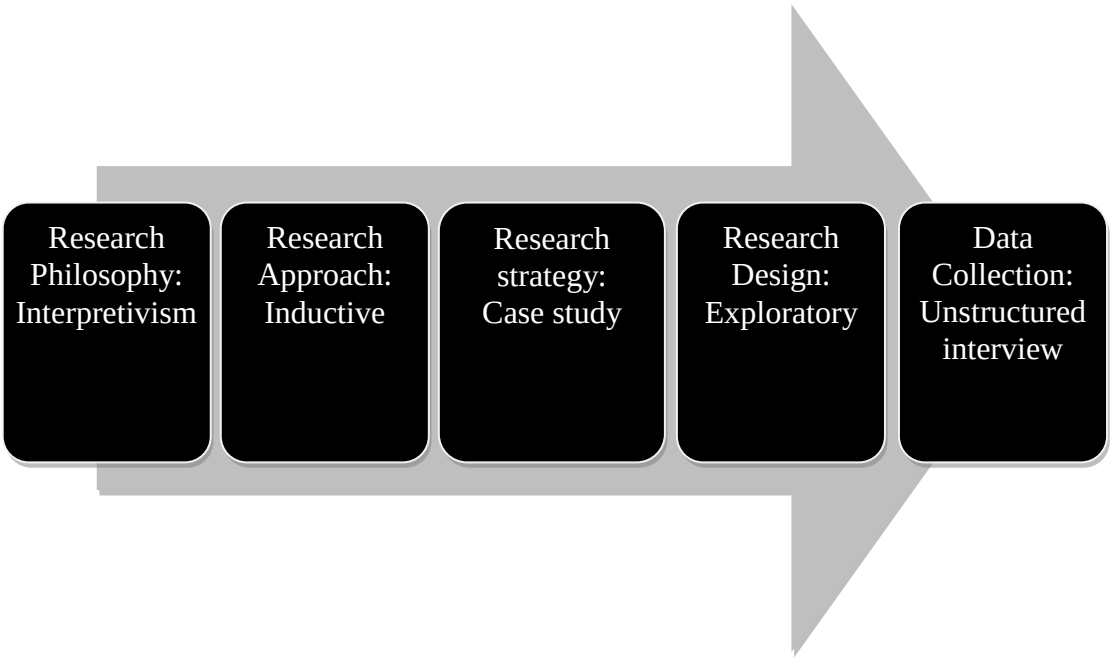

Figure 3.1: Research Process (Source: Saunders et al. 2009, p. 100).

This figure illustrates a graphical view of different stages of methodology that needs to be studied in the research. The layers of the research process represent the following aspects: research philosophy, research approach, research strategy, research design and data collection methods. Each stage represents a distinctive step within the research process.

Basically, the research philosophy depends on the way you think about the development of knowledge (Saunders et al., 2009). This study aims to uncover a deeper complexity of the relations between the PG and top management, by focusing on the structure beneath the organisation. The inductive approach is to gain an understanding of how top management governs ICT projects. The implications of the research are stated and then recommendations for future research are derived. An exploratory research approach through multiple case studies from New Zealand and Malaysia has been selected. This research will conduct an investigation of factors that cause or influence top management to adopt PG. The importance of top management and the importance of PG adoption will be analysed and compared between different companies as the research mapping plan illustrates in Figure 3.2 below.

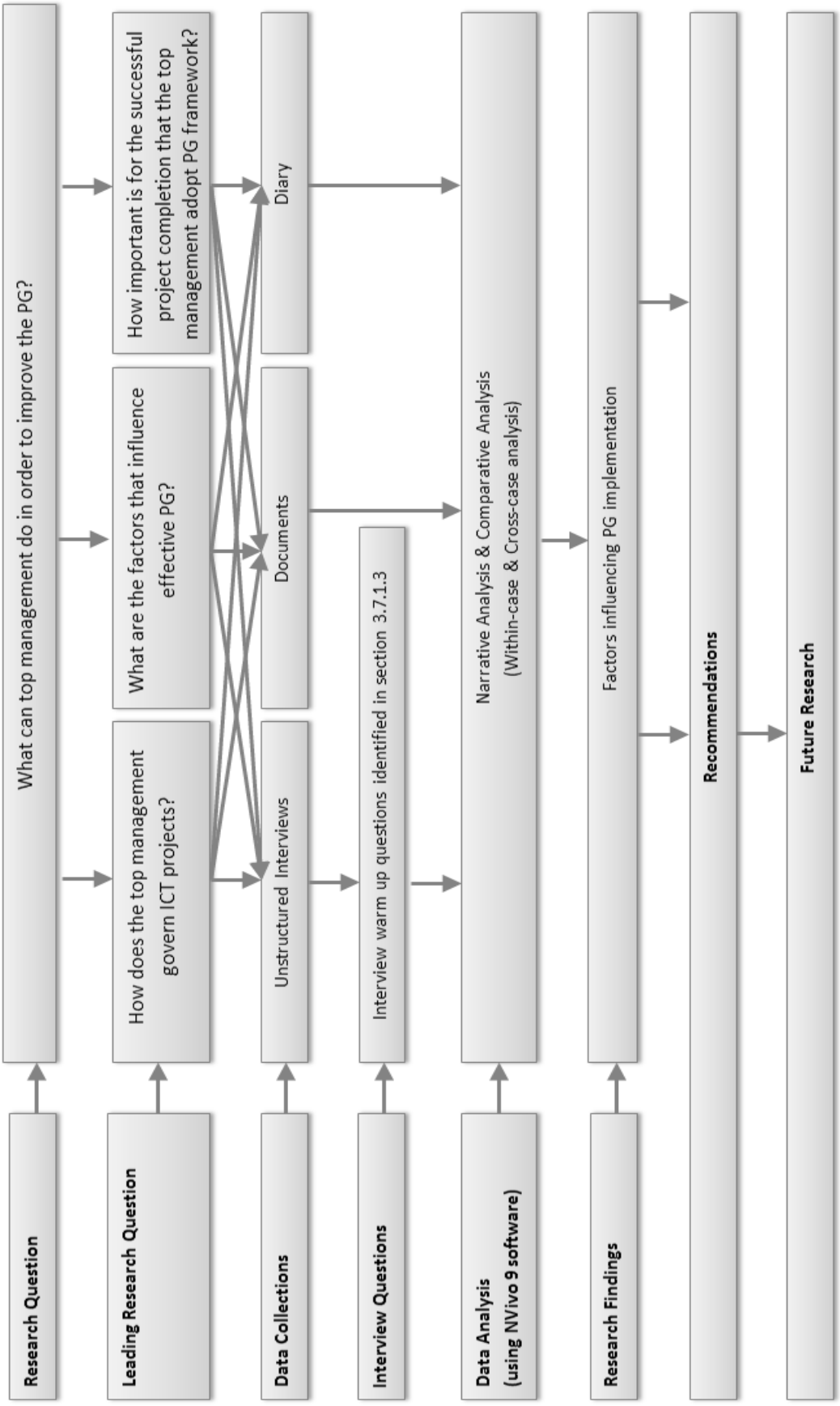

Figure 3.2: Summary of research mapping plan (Source: Author, 2012)

3.3 RESEARCH PHILOSOPHY

The philosophy of a research project can be referred to as a foundation stone of the research. There are four different research philosophies: Positivism, Realism, Interpretivism and Pragmatism (Collis & Hussey, 2003). Positivism and interpretivism are the two common philosophies that are used for information systems research studies (Saunders et al., 2009).

Positivism gives a single, external and objective reality to any research question regardless of the researchers' belief (Levin, 1988). The positivist researchers take a controlled and structured approach in conducting research by initially identifying a research topic, constructing appropriate research questions and hypotheses and then try to develop patterns or themes by qualitative methods through analysis to present the research findings (Bryman et al., 2007; Saunders et al., 2009). Positivists also claim it is important to clearly differentiate between fact and value judgement. This means the researcher must remain emotionally neutral and draw clear distinctions between reason and belief as well as between science and personal experience.

On the contrary, interpretivisim believes it is necessary for the researcher to understand differences between humans in our role as social actors (Bryman et al., 2007). This emphasises the differences between conducting research on people rather than an objects such as cars. Interpretivist researcher enters the field with some sort of prior insight about the research topic but assumes that this is insufficient for the development of a fixed research design due to the complex, multiple and unpredictable nature of what is perceived as reality (Bryman et al., 2007). The goal of interpretivist research is to understand and interpret human behaviour rather than to generalise and predict causes and effects. For an interpretivist researcher it is important to understand the motives, meanings, reasons and other subjective experiences which are time and context bound (Hudson & Ozanne 1988).

The researcher believes that all methods are valuable if applied appropriately. Research can include elements of both the positivist and interpretivist approaches if managed carefully. In this study the purpose is to gain an understanding of how top management conceptualise their role in governing

ICT projects. Thus, the researcher believes that an interpretivist philosophy is suitable for the research.

3.4 RESEARCH APPROACH

There are two well used research approaches, namely inductive and deductive. The chosen approach will provide a foundation for the research in order to determine how to analyse the findings and how to answer the research question in the conclusion (Saunders et al., 2009).

A deductive approach is when a theory is developed and a hypothesis is formulated and then tested through the conducting of studies (Saunders et al., 2009). This approach is often used to test the validity of existing theories through research and comprises reality as being objective. Since deduction has a clear and structured approach, it is usually associated with a positivism position. Thus, a deductive approach refers to the development of a theory and hypotheses and designing research strategy to test those hypotheses essentially in quantitative ways (Saunders et al., 2009; Collis & Hussey, 2009).

Contrary to deductive approaches, inductive approaches are associated with interpretivism and make the argument that the research concept cannot be deduced and generalised. Therefore it needs to be supported by gathering empirical data in order for the researcher to be able to draw a conclusion in his/her research (Saunders et al., 2009). In relation to inductive approach, theory follows specific observations or data findings, which refer to building theory (Bryman et al., 2007). The researcher will need to go deeper into the subject to gain more insight about the context specifics of the study. This requires the researcher to obtain qualitative data that can be used to develop conclusions based on empirical evidence and hence gain a better understanding of the context (Saunders et al., 2009).

The approach adopted by qualitative researchers tends to be inductive. In this case, an inductive approach would be suitable to conduct qualitative research studies. This means the researcher develops a theory or looks for a pattern of meaning on the basis of the data that have been collected. This approach moves from the specific to the general and is sometimes called a bottom-up approach.

3.5 RESEARCH STRATEGY

The research strategy refers to the procedures applied to meet a research goal as well as to address the research question that has been set (Saunders et al., 2009). There are various research strategy methods, which can be identified in the literature such as experimentation, surveys, ethnographies, case study or mixed methods. All these strategies can be utilised to gather data with respect to the philosophy and approach of the research. For instance, ethnography is an approach of qualitative inquiry which attempts to learn about the social and cultural life of communities, institutions and other settings that are investigative and scientific (LeCompte & Schensul, 1999). It involves the description of how people believe, think and behave in a particular setting. Often ethnography can be seen as a process of joining a group, watching what goes on or making some notes.

On the other hand, the survey research strategy allows researchers to collect original data for describing a population too large to observe directly. This strategy is typically associated with a deductive approach and applied sampling procedures. For example, it is possible to use an agency's database for contact information.

In this research, case study was utilised. Robson (2002:178 cited in Saunders et al. 2009) defines case study as a strategy for carrying out research which involves a fact-finding investigation of a particular event within its real life context using multiple sources of evidence. This strategy provides a possibility to be close to the studied objects, enabling a rich understanding of the context of the research and the processes being recognised (Halinen & Törnroos, 2005).

Nevertheless, case study plays an important role in the growing field of governance-related research (Stewart, 2012). This is because case study is one approach that supports deeper and more detailed investigation of the area that is normally necessary to answer "how" and "why" types of questions. Yin (2003) states that case study research is useful when a "how" and "why" questions are being asked about a contemporary set of events over which the investigator has little or no control. For this research, case studies can be especially well suited when the underlying philosophy of the research is interpretive. The interpretive view gives the researcher a belief that reality of the researched subject is subjective to its context.

The relevant set of qualitative tools is now sufficiently diverse, and the choices about evaluating and linking these tools sufficiently complex, that the idea of multi-method can certainly be applied to the standard domain of qualitative work.

3.5.1 Multiple Case Study Method

A multiple case study is a special effort to examine something that has many cases, parts or members (Stake, 2006). It suits to adopt a multiple case study design in governance-related research if the researcher attempts to understand patterns across organisational boundaries. On the other hand, Yin (2003) distinguishes between single case studies that have multiple components and true multi-case studies, which he sees as separate "experiments", having replication logic across a number of separate instances.

An investigation of the difference between multiple case studies and single case studies has been carried out by Stewart (2012). Based on the pattern of journal publications in the period 2004 – 2009, Stewart (2012) concluded that multiple case studies are less frequently employed in the research field than single case study. Since the strategies and integration processes in each organisation are unique, generalisation of the PG practice cannot be based on one case study research. Therefore, one of the reasons is the multiple case studies provide in depth understanding of how top management governs ICT project and would be appropriate to answer the research question.

For this research, the researcher will adopt Stake's approach and define multiple-case study to investigate a particular event at a number of different sites. Besides, all multiple case studies are essentially comparative. This may mean that cases are chosen for their similarities rather than their differences. Stewart (2012) reported that there are a number of studies in the journal literature where a management problem or issue is considered in a cross-national context. Given these considerations, a comparative approach is considered as a specific kind of multi-case analysis rather than a separate genre.

3.5.2 Case Selection

Case selection involved three key decisions. First, there were many case studies either one organisation or multiple organisations in a country were investigated.

There were not many multiple case studies conducted across two different countries.

Second, New Zealand and Malaysia were selected countries because New Zealand is a developed country and Malaysia is a developing country. This maximised the chances of selecting the most theoretically appropriate sample of one small and one large organisation from each these two countries. Selecting organisations with high, medium and low performance in IT project increased the likelihood that contrasting patterns in the data should be noticeable (Eisenhardt, 1989).

Third, three groups of interview participants likely to be able to explain how top management do in order to improve the project governance at each organisation. The potential participants selected were the Chief Information Officer (CIO), Chief Operation Officer (COO), Project Management Officer (PMO), IT director, Project manager and Business manager who could provide the most insight into the IT project governance processes of the organisation (Eisenhardt, 1989).

3.6 RESEARCH DESIGN

A research design considers the general plan of how the researcher gets from one point to another to conduct the study in order to answer the research question (Yin, 2003). It also determines the possible sources for data collection and specifies the techniques (Bryman et al., 2007).

Most of these case studies reviewed in section 3.1, employed a qualitative approach that involved interviews and document collection for data collection (De Haes & Van Grembergen, 2009), Willson & Pollard, 2009) and Tavalea, 2009). A qualitative approach involves interviews, observations, review of existing documents (Collis and Hussey, 2009). This approach focuses more on empirical data gathered. The collected data would provide a wealth of rich information. On the other hand, to overcome the limitation of time and resources, Hancock and Algozzine (2006) suggest employing a quantitative approach. A quantitative approach typically identifies and investigates the impact of only a few variables. This often involves instruments, such as surveys and tests, to measure specific variables (Hancock & Algozzine, 2006).

Although a quantitative approach may be more appropriate when time and resources are limited it doesn't provide many insights regarding factors that may be influencing a situation. When less information is known and studied, a qualitative approach would be suitable to explore a cloud of factors that may be influencing a situation. Besides, a qualitative approach would allow the researcher to gain greater insight into the factors that influence PG.

With a qualitative approach, there are three different types of research design which are explanatory, descriptive and exploratory (Yin, 2003 and Saunders et al, 2009). An explanatory design helps explain the reasons for failure of such projects in the organisation and also provides different views to the PG implementation. Since exploratory research design shares the common research strategy of exploring the existing literature and extracting expertise from specialists in the field through interviews, similarly this research fits in the research strategy of case study and in-depth interviews. In contrast, descriptive design attempts to present a complete description of a phenomenon within its context.

In order to address the research question of this research, an exploratory research design will be used to help the top management find ways to improve the PG for governing ICT projects. However, at certain points, an explanatory research design will be used to find out how top management conceptualises their role in governing ICT projects.

3.7 DATA COLLECTION METHOD

There are several different types of interviews mentioned to collect data, namely structured interviews, semi-structured interviews and unstructured interviews (Saunders et al., 2009). Bryman et al. (2007) put interviews into two categories: standardised and non-standardised. To match up to Saunders categorisation, semi-structured and unstructured interviews can be considered non-standardised interviews. Standardised interviews use questionnaires based on a predetermined and structured or identical set of questions (Saunders et al., 2009). However, semi-structured interviews use a list of themes and questions that may vary from interview to interview. This means that some questions may be asked in one

interview but may not be asked in another interview. The order of questions may also be varied depending on the flow of the conversation (Saunders et al., 2009).

There are many methods for data collection depending on the purpose of the research and on the research strategy. For this research study, the selected research design is described in section 3.6 and the research strategies are described in section 3.5; three main data collection methods are adopted in the research: unstructured interview, document collection and diary recording. The unstructured interview procedure and method are described in subsection 3.7.1. Subsection 3.7.2 describes the method for document collection and diary recording is described in sub-section 3.7.3. Finally, sub-section 3.7.4 outlines the methodology for data analysis.

3.7.1 Unstructured Interviews

The unstructured interviews are a key part of case study research. Their main purpose is gathering as much information as possible on the research topic from the interviewees without interference from the researcher. This allows the interviewees to talk freely and openly on the research topic with some guidance from the researcher (Collis & Hussey, 2009).

There is no predetermined list of questions to work through in the interview. Thus, this is a good research approach to collect qualitative data which are rich in details and descriptions (Collis & Hussey, 2009). In addition, the researcher gets more insights and information from the interviewees.

In order to conduct the interview successfully, Saunders et al. (2009) suggest that the interview should start with more open questions followed by some more probing questions in order to go deeper into the researched area. The interview questions must be phrased that participants can understand easily.

The interview time is also an important issue in this phase of the research. The aim is to conduct interviews with the people at the executive management level because of their understanding of the overall project process and particularly of PG. Therefore, selecting interviewees to participate in this research study is crucial. These participants have a bigger picture of the problems and benefits of the PG approach in complex ICT projects. Thus, one-to-one interviews will be conducted in this study.

It also means that the options of telephone conference and email interviews are not suitable. They are considered not efficient and effective since managers usually are reluctant to answer questions via telecommunication.

Nevertheless, it is important to be organised. There are four main components involved in an interview that will be described in the following subsections: selection of interviewees (sub-section 3.7.1.1), interview planning (sub-section 3.7.1.2), conducting the interviews (sub-section 3.7.1.3) and recording of interviews (sub-section 3.7.1.4).

3.7.1.1 Selecting Interviewees

The selection of participants can largely depend on their role in the organisation in relation to PG and their availability to part of this research interview. The aim of this study is to interview a small sample group that consists of four to five participants from each of the four researched organisations. The possible participants would be the Chief Information Officer (CIO), Chief Operation Officer (COO), Project Management Officer (PMO), IT director, Project manager and Business manager. These are the participants with relevant role, skills and knowledge that could contribute rich data to the research. Their participation is voluntary; however, at least two participants from each organisation are expected to be interviewed.

3.7.1.2 Interview Planning

The researcher must be prepared and well-organised when interviewing interviewees. Saunders et al. (2009) indicate that a researcher using a qualitative, in-depth interview approach needs to be knowledgeable about the research topic and organisational context. It also suggests that notes relating to the research plan must be written down and retained; these should include the reasons supporting the choice of strategy and methods, and the data obtained Marshall and Rossman (1999: cited in Saunders et al., 2009).

Hence, there are three main procedures of interview planning that the researcher must undertake prior to the interview; these are studying the organisational or situational context, practicing interview techniques and prepare research questions that participants can understand.

Firstly, the researcher knowledge of the organisation prior to the interviews is very important (Saunders et al., 2009). Information about the organisation is likely to be found in newspapers, library or web sites. Company reports (i.e. Annual report) and other publications or financial information relating to the organisation should be also obtained from the public domain. The ability to pass on this type of knowledge in the interview should serve to establish the researcher's credibility and thereby encourage the interviewee to provide a more detailed explanation of the subject under discussion.

Secondly, the researcher is to practice the interview before conducting the actual interview to ensure that he/she is familiar with the key topics, times, and probes. Moreover, practicing the interview can ensure that the interview process can flow and that the focus is kept on the research topic.

Thirdly, the researcher's questions need to be clearly phrased and easy to understand. Thus, the participant can answer the questions with confident during the interview. The researcher should ask the questions in a neutral tone of voice and use the appropriate wording for probing questions. This will help the researcher to explore the topic and to obtain relevant information.

Moreover, the interviews should be recorded by writing some useful notes on a notepad and recording on a digital device (Collis & Hussey, 2009). The digital recorder is more convenient than the traditional tape recorder. It is less disruptive during the interview. In this study, a digital recorder will be utilised to record the actual interview. All interviews can be stored in digital format on the digital recorder and later transferred to the researcher's computer for transcripting and analysis. The digital recording allows the researcher to listen to the interviews as many times as needed to examine the interviews thoroughly. The writing of notes during interviews may distract the participant and interrupt the flow of the interview.

Also, Saunders et al. (2009) suggest an appropriateness of the researcher's appearance at the interview as a person's appearance may affect the perception of the interviewee. Thus, Robson (2002: cited in Saunders et al. 2009) advises the researcher to wear fairly formal clothes to match what most likely would be the dress code of the organisation.

3.7.1.3 Conducting the Interviews

Prior to conducting the actual interviews, an appropriateness of the interview location for interviewing must be considered. The interview should be conducted in a place outside the case organisation to avoid disturbance from work. Selecting the location for interviews should also take into account the researcher's personal safety. The level of noise for recording the interviews should be considered as well as some comfortable spaces should be in place for the interviewees. A table for the digital recorder and for the researcher's note taking may be necessary. Also, the telephones and mobile phones should be switched off during the interviews.

At the beginning of the interview, the researcher should first welcome the interviewee followed by explaining the purpose and possible outcome of the research (Arksey & Knight, 1999: cited in Tavalea, 2009)). A clear, polite and friendly approach from the researcher is essential. This means starting with self-introduction to the interviewee, a small chat about the research topic and its potential benefits. It is worth indicating that the interviewee's answers will be valuable for the research.

Eriksson and Kovalainen (2008: cited in Tavalea, 2009) suggest using open questions such as "Tell me about your role in the project" to encourage interviewees to talk more openly during the interviews. Instead of asking complex questions, simple questions are highly recommended as it is easier for interviewees to answer simple questions than complex ones. For example, the following set of questions has been prepared by the researcher as interview "starters":

- Tell me about your role in the project;
- Tell me about your experiences with using PG in a project;
- Tell me about the things that make a project work;
- Tell me how you would adopt a suitable PG framework to ICT projects;
- If you were to start a new project, based on your previous experience, how would you improve PG; and,
- Tell me about your views on the value of project governance in a business environment.

During the interviews, the research should listen attentively, which involves being aware of key information given by participants, looking out for non-verbal signals, and willingness to spend the time needed to listen and build understanding (Torrington, 1991: cited in Saunders et al., 2009). The researcher must demonstrate attentive listening skills. Asking long questions must be avoided (Robson, 2002: cited in Saunders et al., 2009) as well as the use of too many theoretical concepts or jargon (Easterby-Smith et al., 1991: cited in Saunders et al., 2009).

3.7.1.4 Recording Interview Data

There are many ways to record interviews such as note taking or using a digital voice recorder. Note taking during the interview may help the researcher to write down key information but may disrupt the whole interview. However, note taking after the interview may misplace some of the key information acknowledged during the interview. Videotaping can be used for recording interviews but it involves costly equipment that is not convenient to carry around.

In this research, the recommended device to use during the interviews in the research is an audio digital recorder. This device can be placed on a table between the interviewee and interviewer and within an appropriate distance from both sides. The researcher is able to borrow a digital voice recorder from the School of Computer and Mathematical Sciences, AUT University for the research. The audio digital recorder can store up to two gigabytes of interview data. It can record approximately 300 hours of interviews and store them in its internal digital memory device. The audio digital recorder can play, pause, rewind, and fast forward at any time. The researcher is able to record and pause the interview without losing any data. The rewind and fast forward features allow the researcher to listen to interviews as many times as needed to transcribe them into text.

After the interviews, recorded interviews will be coded accordingly and transferred to a laptop for storage and for data analysis. It is also important to backup any audio files related to the interviews in case the audio digital recorder malfunctions or becomes lost. The digital voice recorder and backup disks need to be kept in a safe and secure place during the research.

3.7.2 Document Collection

The interview is only one type of data collection. Documents relevant to the research can also be collected for analysis. Any documents (i.e. Organisation structure) received from the participants will be treated as evidence for the research study. Relevant documents can also be found on the organisation website, such as organisational business or ICT strategic plan, corporate governance, ICT governance and ICT policy. These documents can be categorised using NVivo for analysis.

3.7.3 Diary Recording

Diary records in ICT research are becoming more common. The diary may be used to record daily events or issues that may arise such as having informal conversations with some people working with project administration or governing ICT projects. It can also help with jotting down or write down a conversation that may arise during the research in relation to what people say and think and can be added to the research. Diary records keep the information of the researcher's interpretations of its own expressions (Alaszewski, 2006) and provide sensitive descriptions of an individual's everyday life.

3.7.4 Data Analysis

The process of data analysis begins after the data collected. These data can then be analysed thoroughly to find out answers to the research questions and also develop sound practices for PG implementations. There are five main components involved in data analysis that will be described in the following subsections: sub-section 3.7.4.1 describes the process of transcribing interviews while sub-section 3.7.4.2 describes the role of narrative analysis, comparative analysis is explained in sub-section 3.7.4.3, sub-section 3.7.4.4 describes within-case analysis and then cross-case analysis is described in sub-section 3.7.4.5.

3.7.4.1 Transcribing qualitative data

The first step is to transcribe the digitally recorded interviews to word documents for analysis. Saunders et al. (2009) note that the task of transcribing an audio recording is extremely time consuming. Bryman et al. (2007) advise that it is very helpful if recorded interviews are transcribed as soon as possible after the

interviews are undertaken. This is needed to avoid a build-up of audio-recordings and associated transcription work.

The transcription process can be assisted by any media software such as Window Media Player or a Digital Voice Recorder. This is the reason why digital voice recording is highly recommended for recording interviews. Interviews can be replayed many times to capture all aspects of the conversation. During transcripting, the researcher can identify the interviewee and record the detail of conversations on the software transcribing from voice to text. Each transcribed interview will be saved as a separate word-processed file. As part of this, Saunder et al. (2009) recommend that the researcher uses a filename that maintains confidentiality and preserves anonymity but can be easily recognised by the researcher.

3.7.4.2 Narrative analysis

After transcribing into textual format, thematic analysis is employed in qualitative research. It focuses on examining themes within the data. This method emphasises pinpointing, probing, and identifying patterns or themes within the data (Saunders et al., 2009). In order to analyse data for this research, summarising of meanings, categorisation of meanings and structuring of meanings using a narrative approach can be considered and applied. The coding strategy revolves around reading the interviews and merging related data drawn from different transcripts and notes for classifying them into themes or patterns. Based on these processes, the research should be able to develop theories based on these apparent patterns or relationships and draw and verify conclusions.

Coding data through the use of software such as NVivo is certainly one way of ensuring that responses to questions are systematically examined. Software is also available for qualitative comparative analysis. In inductive studies in particular, extracting common factors from cross-case analyses is a top skill. Eriksson and Kovalainen (2008: cited in Tavalea, 2009) indicate that it is also important when considering using software in data analysis to consider the volume and types of data to be collected and ways to handle data during the inquiry.

The NVivo software enables the researcher to manage, organise, and analyse qualitative data more effectively through transcribing, coding, classifying themes, sorting data, and examining relationships in the data. On the other hand,

CAQDAS is very useful for analysing large volume of qualitative data (Dolan & Ayland, 2001: cited in Eriksson & Kovalainen, 2008). However, CAQDAS does not provide any theoretical or analytical framework. The researcher has to decide on what theoretical and analytical framework should be used in the study (Eriksson & Kovalainen, 2008: cited in Tavalea, 2009). Hence, narrative analysis is the analytical framework employed for this inquiry.

The transcribed interview data can be imported into the NVivo software. The guidelines provided above for thematic analysis can then be applied whereby the researcher goes through each interview's data and code substantial statements. After coding all the interview data, the researcher can group the coded statements into several themes or ideas. A framework for the research analysis is constructed and provides answers for the main research question.

3.7.4.3 Comparative analysis

Generally, a comparative analysis will be another strategy for this investigation as this research design provides multi-dimensional evidence and allows the researcher to match theoretical patterns with empirical patterns (Eisenhardt, 1989).

The key stage in multiple case studies is the comparison between cases or cross-case analysis. Stake (2006) identifies three tasks for doing this. Firstly, the researcher identifies themes in each of the case studies that maintain the greatest level of situational detail. Secondly, he/she moves from themes to the identification of factors. Thirdly, the researcher does the cross-case analysis. The cross-case analysis involves generating a case-ordered descriptive matrix that builds a basis for comparing the cases on a number of factors.

3.7.4.4 Within-case analysis

Each case is analysed in-depth separately in order to provide a detailed description. First, codes are established based on the data collected from multiple participants within each case. Next, themes are identified within a case. As the themes are identified, the research framework begins to emerge as assertions are made based on the collected data. Likewise, the lessons learned within a case are captured. This results in a research framework which continues to be refined as data collection continues for subsequent cases. This procedure allows the unique

patterns of each case to emerge before a cross-analysis is performed (Eisenhardt, 1989).

3.7.4.5 Cross-case analysis

Cross-case analysis and pattern matching are performed in order to search for and identify emergent themes, concepts, relationship and patterns across cases. Matrices are used to compare cases based on the codes established within each case. Each code was examined across the cases.

In an example given by Cress and Snow (2000), they explain how they needed to operationalise each of the various conditions that they believed might affect movement outcomes, using coding procedures that were much more systematic than those often used in qualitative inquiry. They also chose a structured method of analysis, qualitative cross-case analysis, to assess how the various conditions influenced organisation outcomes. This procedure identified the combination of factors that had to be present across multiple cases to produce a particular outcome.

To answer the research questions, this research assesses the outcomes of the top management role in each organisation. The levels of PG, inter-organisational collaboration and inter-organisational learning are examined and evidence is gathered to determine how top managements govern ICT projects.

3.8 SUMMARY

The review of similar studies revealed the case study method to be most effective for qualitative research. Overall, this chapter evaluated a suitable method to answer the research question and found it to be exploratory research through utilising case study methodology. Using the research process model illustrated by Saunders et al. (2009) provides a design for a qualitative study. This implies that the induction approach is more appropriate when using an interpretivism research philosophy complemented with a qualitative method.

The collected information can be organised and coded with the help of the NVivo software program. It can be then analysed through narrative analysis and comparative methods. The interview data can be transcribed from voice to textual format for analysis. The field research can now proceed and the findings will be reported in Chapter 4.

Chapter 4

RESEARCH FINDINGS

4.0 INTRODUCTION

While Chapter 3 establishes the methodology for doing the qualitative research, this chapter reports the findings of the research. Section 4.1 describes how the research work was handled and the preparation before the data could be gathered. In section 4.2 the company profiles are presented as compiled from secondary data sources and analysis of interviews. Summary tables are provided to easily access the details. In section 4.3 describe the challenges of managing data collection across different countries and in multiple sites are reported to demonstrate the problems that had to be resolved and the dynamic nature of important people in action. In section 4.4 the actual field findings are reported. The subsections are structured around the mechanisms of PG implementation defined in Chapter 3 – structures, processes and people. The thematic overlay is minimised so that the relevant people involved can be heard to answer the research questions.

Most importantly Table 4.9 summarises the factors that are identified in the research to impact PG. These findings will be discussed in Chapter 5.

4.1 RESEARCH FIELD STUDY - PREPARATION

This research is carried out in accordance with the specific requirements presented in Chapter 3. The target members for the research were the ICT manager, project manager, finance manager as well as the business manager of the four organisations. At least two members from each organisation were required to participate in the research as planned and outlined in Chapter 3. Most selected members managed to participate in the interview face-to-face and were asked to discuss the project management processes in the organisation.

Before the research field study, the researcher had gone through a process of getting the ethics approved. Once the ethics approval was given (Appendix A), staff in the four organisations were contacted and provided with the ethics forms required by the Auckland University of Technology (AUT)

Ethics Committee. Once the names and contacts of the interviewees were known, communications were initiated between the researcher and the interviewees. The aim of early communication was to build a connection with the participants. The Participant Information Sheets (Appendix B) were emailed to each of them to explain the purpose of the research and to give an idea of what the interviews were about. The Consent Forms (Appendix C) were also included in the email for the participants to sign if they agreed to participate in the research. Fortunately, most of the potential participants were willing to participate and did take part in the research. In addition, the AUT research protocols relating to the confidentiality of the collected data and identity of organisations and participants were communicated and complied with.

Interviews were carried out in two different countries. Company 1 and Company 2 were located in New Zealand whereas Company 3 and Company 4 was located in Malaysia. The researcher travelled to Malaysia and interviewed participants from Company 3 and Company 4 as planned. This was shortly followed by interviews the two organisations in New Zealand. The purpose was to get the overseas field study completed as soon as possible. It was easier to arrange interviews locally in New Zealand and make the necessary adjustments to accommodate interviewees work schedules.

Prior to the actual interviews, the researcher spent a substantial amount of time planning and prioritising interview questions. This included collecting information about the organisations from their websites and from other available documents.

4.1.1 Interview Periods

In depth and unstructured interviews with six participants in Malaysia and six participants in New Zealand were carried out. These 12 participants from two countries included three General Directors, one IT Director, two Chief Officers, three members who worked as senior managers and three members who worked as project managers in these organisations.

Participants were informed about the purpose of the research using the Participant Information Sheet and Consent Form used for the research (See Appendix B and Appendix C). The roles and identity of these participants are

protected in accordance with the AUT research ethics policy. All participants signed the Consent forms before taking part in the research.

All of the interviews were started with a greeting leading to open questions and answers just like a normal conversation and closed with thanks to the interviewees for their contribution to the research. All participants were able to communicate in English fluently.

During the face-to-face interview, with the permission of the interviewee, a digital recorder was placed on the table between the researcher and the interviewee to record the conversation during the interview. However, two interviews were not recorded but a memo was written for them.

The interview locations were various. The interview meeting locations at were initially set in a café. Meeting locations for some interviews were moved to a meeting room on the organisation's premises. All meeting rooms were less disrupted by noises or other people than the cafes.

Most interviews took about thirty minutes, apart from three interviews that were about forty minutes long. Notes were taken after the interviews to avoid disruptions during the interviews while relying on the digital recorder to record the interview entirely.

Interviews in Malaysia were completed first. The researcher took some time to arrange interviews in New Zealand. During the break period, the researcher reflected and recollected thoughts of interviews in Malaysia. Any difficulties that occurred in interviews that had taken place in the first two organisations were identified. The researcher acknowledged the difficulties encountered as lessons learned. This helped the researcher to construct the next set of interviews in a better way, for example handling the time promptly as well as questioning the interviewee in a direct manner.

4.1.2 Data Processing and Analysis

The recorded interviews were transferred to the researcher's computer. Each interview file was coded to protect the interviewees. Then, the researcher transcribed each interview file in text format using Microsoft Word documents. Transcription took a considerable amount of time, and the generated word documents were revised a number of times to ensure they captured all intentions and meanings in the conversations. Some transcriptions were short and some were

very long depending on the noise background from the file, the researcher's typing speed as well as how fast the interviewees' answers were.

After the transcription, the researcher imported all transcript files into NVivo version 9 software to do the qualitative analysis. As described in Chapter 3, NVivo allowed the researcher to go through each interview transcript and code them to themes and patterns found from the transcripts. After the coding, the researcher grouped related themes and categorised them into the key areas of the PG framework. There are six principles in the framework which are: Responsibility, Strategy, Investment, Performance, Conformance and Human Behaviour. This framework will be used and discussed in Section 4.4.

4.2 COMPANY PROFILES

For the purpose of anonymity the names of the four organisations have been disguised as NZ 1, NZ 2, MY 1 and MY 2 representing the first, second, third and fourth organisations in New Zealand and Malaysia respectively.

Table 4.1: Summary of Data Sources for all Companies

	Company NZ1	**Company NZ2**	**Company MY1**	**Company MY2**
Company Profile	One of the largest IT companies in NZ (infrastructure service sector)	One of NZ's fastest growing technology companies. (Service sector)	One of the largest holding companies in Malaysia	Small & rapidly growing East Malaysian's fully-integrated poultry producer
Respondent position	Senior Transition Manager, Project Management Chief, Quality Assurance Manager and Project Manager	General Director, Chief Operation Officer	General Director, Project Manager, System Integrate Manager	General Director, IT Director, Senior Software Developer

Knowledge of project process	More than 10 years of project management/ processes and provide trainings	More than 10 years of IT implementation /project management background	More than 10 years of IT implementation /project management background	Less than 10 years of IT implementation experience as well as PM processes
Knowledge of project governance	Write and use governance to run projects and business to keep up with standards and quality assurance	Attempt to use other standards to manage implementation and run projects.	Attempt to use other standards as a guideline to manage their project	Attempt to use other standards to manage the implementation and to run projects.
Project governance adopted in the organisation	Yes	No	Yes	No

The profiles of the organisations (hereinafter referred to as 'Company') are given in Table 4.1. To maintain proper anonymity, the company profile given there is very brief as New Zealand and Malaysia are small countries with few large organisations and it is very easy to identify a company using a few attributes. All these four organisations were involved in a similar PG process and implementation in their respective organisation.

4.2.1 Company NZ 1

Company NZ 1 is one of the largest ICT companies in NZ (infrastructure service sector). The company provides customers with a high quality facility delivering world class levels of ICT availability, reliability, resilience and security. The focus was also placed on the power efficiency and environmental impact of the building. For instance, the company provides Cloud computing services that can be integrated with customer systems located on- or off-premises. It provides peace

of mind, extensive security structure and added value through Cloud solutions and managed services.

Table 4.2 presents the source of data that has been collected from various people and other sources in Company NZ 1. Most of the information gathered was from the interviews. No documents or charts were collected and the information available on the website was limited.

Table 4.2: Summary of Data Sources for Company NZ 1

Data Sources	No. of items	Details of Items
Recorded Interviews	4 participants	Senior Transition Manager (Interviewee 1) Project Management Chief (Interviewee 2) Quality Assurance Manager (Interviewee 3) Project Manager (Interviewee 4)
Relevant Documents	2 documents from websites	Organisational structure Organisation partnership
Diary Recording	1 Diary book	2 – 3 days of diary recording from preparation till end of the interviews

4.2.2 Company NZ 2

Company NZ 2 is a small organisation and is one of New Zealand's fastest growing technology companies. The organisation has created their own software, which is highly specialised and designed to display historical newspaper collections into digitised newspapers and other text-based digital collections. It takes data in any format and builds it into a powerful digital library that can be deployed on the internet, DVD or public i-store. The aim is for customers to spend less time and money administering software and systems, and more time developing digital collections.

The organisation has a team of eight staff. The staff often takes on different roles in the organisation depending on what customers they are meeting. This is because the staff that is strong in designing and implementing ICT software may also be required to manage projects and provide customer services. These practices are embedded within the organisation's culture. The advantage of multiple roles allows staff to build up their skills such as communication, teamwork or project management. However, the risk of developing such a knowledge and practical experience in those best practices and frameworks is that

time and long-term commitment is required. The organisation is a very young innovative business.

The researcher was only able to approach two participants for interviews at the director's request. Initially, the researcher aimed to interview at least four staff members from the organisation. The two participants were interviewed outside of the premises. The interviews took 30 to 40 minutes. A digital recorder was placed between the researcher and participant and used to record the interview.

Table 4.3 presents the sources of data that has been collected from various people and staff in Company NZ 2. Most of the information gathered was from the interviews. There were no documents or charts available and the information available on the website was limited.

Table 4.3: Summary of Data Sources for Company NZ 2

Data Sources	No. of items	Details of Items
Recorded Interviews	2 participants	General Director (Interviewee 5) Chief Information Officer (Interviewee 6)
Relevant Documents	Nil	Nil
Diary Recording	1 Diary book	2 – 3 days of diary recording from preparation till end of the interviews

4.2.3 Company MY 1

Company MY 1 operates in several sectors of the Malaysian economy that include plantation, heavy industries, property, pharmaceutical and many others. It is a large holdings organisation with approximately 15,000 employees spanning over many subsidiaries. CG policies for the organisation exist in a manual. It guides and monitors the affairs of the organisation on behalf of the shareholders and provides full and effective control over the organisation. As far as the researcher is concerned, governance relationships with ICT are mentioned in the context of CG. The current CG scope covers major operational, financial and corporate issues.

The organisation has an ICT team with 20 - 40 staff, but the number varies because of the use of contractors. It provides ICT infrastructure services to the various sectors in the holding organisation. The organisation, however, does outsource some of their projects to specialists to complement the company's

expertise in network engineering and network cabling. Besides, the holding organisation also hires a consulting firm to carry out their external audit and accounting report. ICT audit was not mentioned. However, the concept of developing internal knowledge in best practice and ITG or PG was under-developed. It was recognised that it is important to ensure these practices are adopted within the organisation's culture. The term "governance" is a relatively new concept but it is a powerful one. The challenge of adopting governance frameworks is that it requires time and long-term commitment.

Company MY 1 was where the researcher carried out her first interviews. Five staff members were available for interviews. Interview appointments were arranged and scheduled. However, due to some unexpected on-call duty outside of the organisation, only three interviews were recorded. Initially, the interviews were arranged to take place at a café nearby the organisation premises. Subsequently, the interview was relocated to the organisation meeting room as suggested by interviewees. Each interview took approximately 30 to 40 minutes. A digital recorder was placed between the researcher and participant and used for recording.

Table 4.4 presents the sources of data that has been collected from various participants and other sources.

Table 4.4: Summary of Data Sources for Company MY 1

Data Sources	No. of items	Details of Items
Recorded Interviews	3 participants	General Director (Interviewee 7) Project Manager (Interviewee 8) Senior System Integrate Manager (Interviewee 9)
Relevant Documents	6 documents from the organisation's website	Organisational structure Chairman's profile Statement on Corporate Governance Organisation Group chart Organisation's Board Profile & Policy Annual Audited Account
Diary Recording	1 Diary book	2 – 3 days of diary recording from preparation till end of the interviews

All three interviews were conducted on the same day. The researcher had a few minutes break in between interviews as planned. Those breaks were needed to

record some notes, when necessary, and to prepare for the next interview. Not surprisingly, one interviewee came a bit earlier than the scheduled time, and interrupted the interview that was being carried out at that time. However, the researcher managed to bring the interviewee back on track and it was completed as scheduled. One of the interviewees requested that the digital recorder be switched off. However, the researcher made notes as soon as possible when her memory was still fresh immediately after the interview.

Due to time limits and the nature of the business, it was not possible to stay on the site outside of the scheduled time. However, information available on the organisation's website was rich in content. Prior to the interviews, the researcher had spent a fair amount of time surfing the organisation's website and gathered as much information as possible which helped in building the connection with the interviewees.

4.2.4 Company MY 2

Company MY 2 is a relatively small & rapidly developing East Malaysian's fully-integrated poultry producer. The organisation is involved in the breeding, hatching, processing, marketing and distribution of poultry products within East Malaysia.

Approximately 500 staff are employed in many small branches in various locations across East Malaysia. The organisation has an ICT team with seven staff members located at the organisation's main premises. The organisation purchased the computer programs which were developed mainly for their business from a software development company. In addition, three programmers from the software development company were approached by the organisation joined the team where they continue to improve the programs. However, there was no documentation related to the development of these programs. Again, for best practice the organisation needs ICT management, ICT processes and guidelines for quality assurance, particularly because it is a fast growing business.

Four staff members agreed to be interviewed. Interview appointments were arranged and scheduled. However, due to unexpected events, only three participants were interviewed. Initially, the interviews were arranged to take place at a café. Due to distance and time constraints of the interviewees, the interviews were relocated to the organisation's meeting room as suggested by the interviewees. It had a meeting table and chairs and was well suited for interviews.

The researcher had a break in between interviews, which was used to record some notes, if necessary, and to prepare for the next interview.

Each interview took approximately 40 to 50 minutes. A digital recorder was placed between the researcher and participant and used for recording the interview. All three interviews were conducted on the same day. The interviews were completed as scheduled. For one of the interviewees the digital recorder was switched off to complete the interview. The researcher noted down information while the researcher's memory was fresh after the interview.

Table 4.5 presents the source of data that has been collected from interviewees and other sources. Most of the information gathered was from the interviews. There were no documents or charts collected. Surprisingly, the organisation does not have a website. Thus, the researcher had to rely on information given in the interviews. However, some issues and challenges were encountered that had to be dealt with to ensure activities took place as planned.

Table 4.5: Summary of Data Sources for Company MY 2

Data Sources	No. of items	Details of Items
Recorded Interviews	3 participants	General Director ((Interviewee 10) IT Director (Interviewee 11) Senior Software Developer (Interviewee 12)
Relevant Documents	1 documents	Organisational structure
Diary Recording	1 Diary book	2 – 3 days of diary recording from preparation till end of the interviews

4.3 ISSUES AND CHALLENGES

One of the issues and challenges encountered by the research was getting secondary data from an audit organisation. The purpose of obtaining secondary data was to find out more about the company. The process of getting the secondary data had to be approved by the executive committee of the organisation. Due to the information being strictly confidential and sensitive, the process of obtaining the secondary data ended up unapproved. For this reason, the field study was delayed for about five months.

The second challenge was getting the ethics applications approved by the AUT Ethics Committee for the research. Due to back and forth of the ethics

application with minor amendments, the field study was delayed for about another month until the ethics application was approved.

The third challenge was trying to gain access to the research field overseas. Initially the researcher assumed that the proposed interview dates of field study had been agreed and arranged travel for interviews. However, there was no response from the director for reconfirmation of interview time and location. Hence, the researcher had to pray for miracles because she was concerned the organisation may decide to withdraw from the research field study at the last minute. Luckily, the director responded back a day before the interview date.

The fourth challenge was similar to the previous challenge. The researcher wrote to the second organisation before travelling overseas to carry out the research field study ad did not hear back from the organisation until two days before departing from New Zealand. Thankfully, the director supported and endorsed the research straight away. The researcher then arranged the travel to the research field and commenced the data collection for the research.

The fifth challenge was the funding for travel expenses for the case organisation. The researcher was supposed to use the staff development fund at the researcher's work place and it was to be enough to cover the trip overseas and to carry out the research field study. Unfortunately, the researcher was not able to predict the interview date for the second organisation until the research field study was granted permission. Due to the limitation of time to search for alternative funding sources and the significance of the research to the researcher, she had to self-fund the domestic travel expenses for the research.

The availability of the interviewees was also an issue. The target participants for the research were the ICT manager, project manager, finance manager as well as business manager of the organisation. However, some of these members were not available due to leave during the period of data collection for the research or were on immediate callout for projects outside of the premises.

Furthermore, the understanding of the term "governance" confused several participants and they decided to pull out of the interview. Basically, they believed the research was referring to projects related to ICT areas only and was not closely related to business in general. In some interviews, the researcher had to explain the meaning of "Governance" in order to gain relevant information for the research from the participants.

Some interviews took place in a café. The location chosen was disrupted by noises such as background music or a barrister making coffee. So the interviews had to stop from time to time and questions and answers repeated a few times during the interviews. Once we had to shift tables to another quiet corner to continue the interview.

4.4 REPORT OF FIELD FINDINGS

The interview transcriptions were reviewed to find common themes that have been expressed by the participants. The themes were coded around the focus of the research with the aim of finding answers to the research question. The research was structured around the PG framework which contained three mechanisms. These principles are: structure mechanisms are reported in Section 4.4.1 while Section 4.4.2 discusses the process mechanisms and people mechanisms is presented in Section 4.4.3. For each of these mechanisms the findings of the six main principles will be discussed in respective subsections for each company: Responsibility, Strategy, Investment, Performance, Conformance and Human Behaviours. Interviewees are coded according to their role as explained in Section 4.2.

4.4.1 PG Implementation: Structure Mechanism

As discussed in Section 2.5.1, the structure mechanism defines who is responsible for making a project decision. The respondents were asked to describe how the project decisions were made. In the comments cited further below, the respondents describe their experiences and perspectives of how projects were selected and prioritised, and the oversight and management of project activities including change management and realisation of benefits.

4.4.1.1 Responsibility

Much evidence from the case studies showed that it is important the decisions regarding project selection and priorisation are made by appropriate personnel. These examples demonstrate that it will be appropriate for top management to delegate aspects of their project- related governance responsibilities to managers within the organisation.

4.4.1.1.1 Company NZ 1

Company NZ 1 is a large organisation. The whole process of running a project is not one person's responsibility. There will be many staff involved in a project. Based on the interviews, Figure 4.1 demonstrates how the organisation structured their roles and responsibilities around projects. Project-related decisions are made at the strategic level where the Senior Transition Manager makes the connection between the stakeholder requesting service and the organisation.

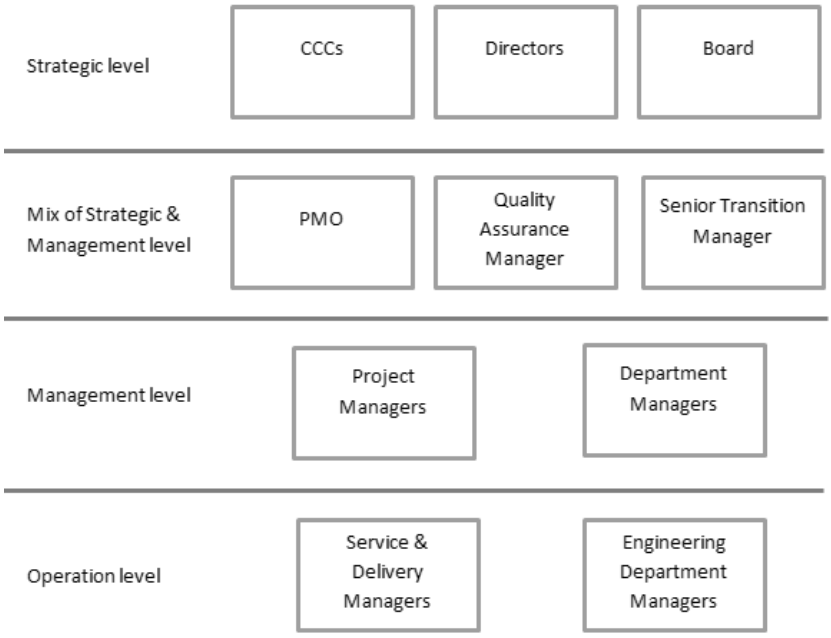

Figure 4.1: Reporting structure for Company NZ 1

It begins with business talking where a stakeholder approaches the organisation requesting either to have a new system implemented or to have their existing system upgraded. Often this business talking is initiated at the strategic level where Senior Transition Manager communicates with the stakeholder, finding out what the stakeholder's requirements and needs are. With regards to roles and responsibilities in making decisions for the project, the Senior Transition Manager also needs to understand the stakeholder's business needs as confirmed by Interviewee 1:

> *"Because I am a customer facing.… I have to make sure people do trust me for transiting their office into our support. At the same time those people internally that have been doing the work are equally important to me to trust me.… So I treat them as any clients because they are centrally delivering the work." (Interviewee 1)*

Interviewees 2 and 3 also confirmed that the project team are communicating with their customers regularly so that any project decision makings or project issues are communicated to stakeholders in a timely and comprehensive manner, as explained:

> *"It is very important to keep the customer involve and inform. … Making sure the customers understands and agrees to the project proposal. Any project decision making need to be made clearly and informed." (Interviewees 2)*

All three interviewees highlighted that it is important to make sure the project decisions and the rationale behind decisions are communicated to both clients and staff. This means that any appropriate information must be shared and issues arising must be dealt with in a timely manner.

At the management level, the Senior Transition Manager liaises with the Project manager to put together a proposal. Often a Project manager will analyse the requirements and write up a proposal including budget, timeline and resources. The Senior Transition Manager will do the communication and signing the contract with the vendor. The organisation would only start the project once there is a contractual agreement as explained by interviewee 4:

> *"I have got it structured across contractual commitment will be the first things. Otherwise we don't do what we will be doing or who is involved without having a contractual commitment right up front." (Interviewee 4)*

Hence, this can cause the organisation to blow their budget and the project will not be completed in a timely manner if there is no contractual agreement before starting the project. Interviewees 2 gave the following example:

> *"It has been 4 months trying to complete this project and close project. This project is scheduled for 2 weeks and run over time. It was actually costing the organisation more because of this project is a fixed price project. … This means if they don't do the testing thus they don't sign off. There is no certainty of when this project complete. May be next month..." (Interviewees 2)*

Once there is a contract agreement, the Project manager will notify the relevant departments and book in a time to work on the project. At the operational level, a Project manager does not have the same or fixed team working on projects. The

Engineering department and Service Delivery department will assign staff to work on the project until completion. There are many projects running simultaneously and they deal with these projects on a daily basis.

4.4.1.1.2 Company NZ 2

Company NZ 2 is a small organisation and only has a handful of staff working in the organisation. The top management goes through the selected project by going over the project requirements, the size of the project, the project budget and estimate how long it will take for the project to complete. Interviewee 5 is the Managing Director and explained:

> *"I decide who does the work depend on workload, type of work, what people I have got, what project I have got. This depends on what types of projects are there. We have experienced as well as less experienced staff. Some projects that we know would be better off manage by more experienced staff. In some projects, we will get paired one of the less experience people together with experienced staff together to work in a small team thing usually a pair." (Interviewee 5)*

They usually were in a position to take into account all the relevant facts and decide who is accountable to work on the project. Once the project contractual agreement is made, the managing director would ask the COO to assign the roles to staff to work on the project. COO becomes the project manager to manage the project team that deliver the project. Even though the COO supposedly works at the management level, this organisation requires the COO to work between strategic and operational levels. COO assigned staff to work on the project and sometimes would pair with junior staff to develop the project in order to enhance the junior staff working experience and skills.

Figure 4.2 shows how the organisation structures their roles and responsibilities to work on a project. Project decisions are made by the Managing Director at the strategic level, sometimes together with the Chief Operation Officer (COO).

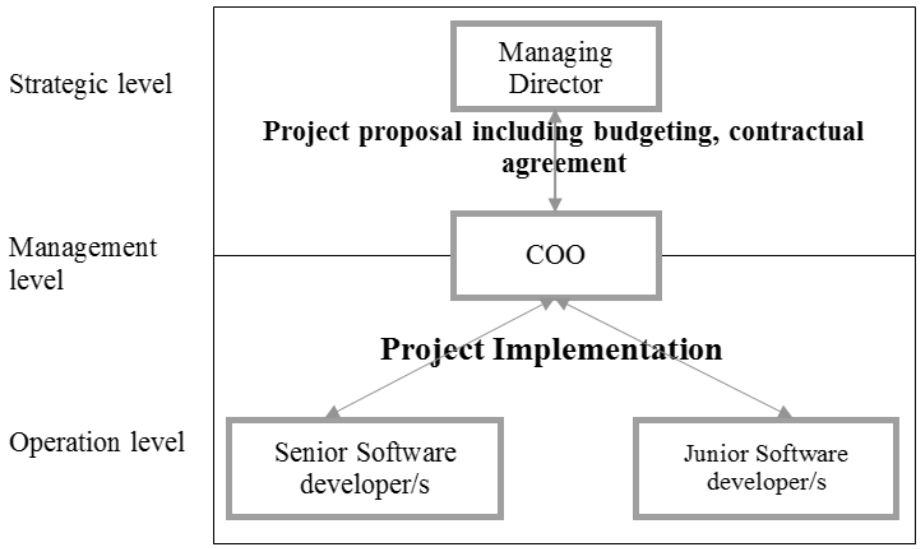

Figure 4.2: Reporting structure for Company NZ 2

4.4.1.1.3 Company MY 1

Company MY 1 does not have responsibility groupings in the organisation as the NZ companies have. Company MY 1 is a large public listed organisation and contains many businesses and sub companies. Company MY 1 is at the holding level, supposedly managing the ICT infrastructures within the organisation but due to the size of the organisation, it is difficult to manage the ICT infrastructure of every business and company given that each of them has its own unique ICT system and ICT infrastructure as explained by Interviewee 7:

> *"This organisation it is a big group. …* A large *diversified* business *group. We have 6 different divisions ranging from shipping building to plantation. … And as an ICT company at the holding level. We do not have the expertise to cover all businesses and companies. It is impossible for this ICT Company to know from plantation, shipping building… to also know property travel. The domain knowledge is limited." (Interviewee 7)*

Hence, Company MY 1 only focuses on the hard-core ICT infrastructure at the system level. This includes the system evaluation, hardware and software evaluations. There is no business application focus.

Figure 4.3 shows that the General Director receives projects externally and internally. There was no project selection and priority sorting at the executive level. Projects were passed to the General Director first. The Project manager

would put together a proposal including budget, resources, requirement and timeline for the project. Due to certain projects requiring specific resources that were not available in the organisation, those projects would be contracted to external contractor to deliver the project.

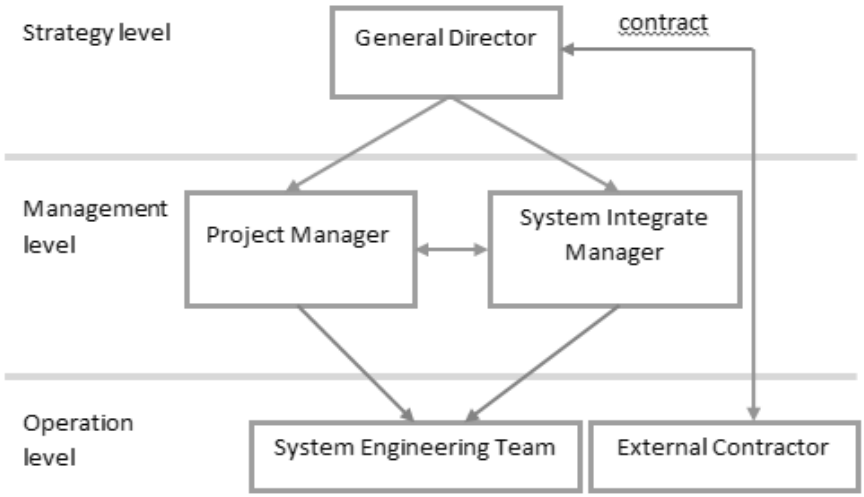

Figure 4.3: Reporting structure for Company MY 1

On the operational level, there was only a handful of staff working on various ICT infrastructure projects, as explained by Interviewee 7:

> *"We will have at least one Project manager, sometimes up to 4 systems engineers and normally we will put a backup Project manager in a form of operation manager. So, this is basically our project team. We have staff with many of infrastructure work experiences as well as new people come and tag along to develop their experience with the jobs." (Interviewee 7)*

Based on the interview with Interviewee 9, the respondent worked closely with the system engineering team and four members were mentioned. There was no clear indication from Interviewees 7 and 8 how many members in the system engineering team were involved in delivering projects.

4.4.1.1.4 Company MY 2

Company MY 2 is considered a large organisation in its geographical area. However, it is a relatively small organisation compared to Company MY 1. The current organisation structure is shown in Figure 4.4. At the strategic level, the IT

Director reported to the General Director. There was no reference to what duties the General Director expected from the IT Director.

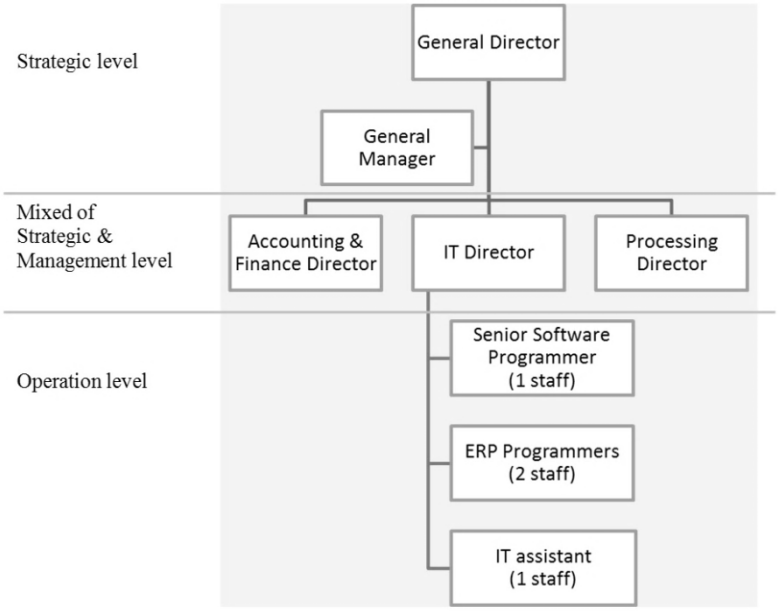

Figure 4.4: Reporting structure for Company MY 2

At the management level, The IT Director managed the ICT team that consists of the senior software programmer and the ERP programming group as illustrated in Figure 4.4. The senior software programmer develops new business applications to extend the ICT development in the organisation. This senior software programmer has a variety of programming skills to develop applications for the organisation. The ERP programming group makes sure that the current business applications and server are functioning properly. This group was originally employed in an ICT organisation that developed the business applications for Company MY 2. After the business application completion, these two programmers were approached by the organisation and joined them to manage the business application development.

4.4.1.2 Strategy

The respondents were asked to describe what strategy was used to maximise the potential success of projects involving investment in ICT. The respondents had a variety of perspectives. There were no general agreement and understanding of what led to project success.

4.4.1.2.1 Company NZ 1

The organisation has a strong belief that strategic alignment between ICT and business is very important. Otherwise their projects would fall apart:

> *"ICT has become a key business function for every organisation. It is important that IT and business strategy aligned together otherwise there is no value added at all… Everything I do I need a business policy and the process of how you doing it as well. I will negotiate how to do and sometime is how we best do it so best practice….Unless I have got business policy my best decision may not be best practice." (Interviewee 1)*

Apart from the requirement that business and ICT strategy must align, it is also important to have policies supporting the on-going requirements of the business to deliver new or updated ICT project capability. Interviewee 1 also explained:

> *"Having a good kick-off workshop with the project team members involve, mean the project team members get to know the big picture of the project. This means team members have an overview of the project even though each of them specifically plays a certain part of the project." (Interviewee 1)*

This means that staff must have all the necessary information and knowledge to deliver the project and that the project decisions are made appropriately.

4.4.1.2.2 Company NZ 2

There was not much focus on discussing the strategic alignment for project success. There was no clear statement identifying business – ICT alignment. However, interviewee 5 briefly mentioned that a project proposal must be put together before building an ICT strategy to support the project. This also means that the project proposal depends on the business objectives and requirement. The organisation needs to make sure the business requirement is supported by ICT.

4.4.1.2.3 Company MY 1

Respondent 7 mentioned that the ICT department focused on system level only and the ICT department did not implement business applications:

"We are looking at hard-core ICT infrastructure at the system level. This means the evaluation for system hardware software evaluation but not business application." (Interviewee 7)

However, interviewee 9 confirmed that business – ICT strategy alignment is a must in this organisation. Clients must have a clear business strategy in order for the ICT department to implement a system to support their business.

"Since many businesses nowadays relies ICT to deliver services so heavily. ICT is one of the core services we sell to our customers. We must be very closely tied to the business units." (Interviewee 9)

4.4.1.2.4 Company MY 2

There was no deep conversation on business – ICT alignment in the organisation. Interviewee 11 spoke about strategic alignment in the previous work place where it was a lot easier to work on projects when business and ICT aligned. This was compared to the current work environment:

"There is no strategic alignment planning here. No one here understands ICT. Thinking everything is so expensive when ICT is mentioned in the meeting." (Interviewee 11)

Interviewee 12 also confirmed that there is no business-ICT alignment in the current organisation. Organisations with underdeveloped business-ICT alignment face endless issues with overspending on projects or implement projects that do not meet business requirements:

"I cannot see there is any business & ICT alignment here. Even if there is one – it would be never-ending issues." (Interviewee 12)

4.4.1.3 Investment

Respondents were asked how investments in projects are made. Based on the structural mechanism for investing in a project, a contractual agreement must be met. This provides a clear and transparent decision making to ensure project delivery.

4.4.1.3.1 Company NZ 1

Company NZ 1 has the contractual agreement arranged between the client the manager level. Interviewee 4 explained,

"The initiation phase would be put down on the statement of words, documenting it all agreed points and then get them to sign off." (Interviewee 4)

Some contractual agreements are made at the strategic level in the organisation depending on the stakeholder's size and policies. Once the contractual agreements are made, managers and team members meet together to discuss the project; the management provides the team with the big picture of the project. Interviewee 1 made the following comments:

"A meeting will be set up to debrief the project team members involve to provide full details of the project. Thus, project team members have an overview of the project even though they will be assigned to work on certain parts of the project." (Interviewee 1)

Interviewee 4 also explained that the project manager would put together the project proposal and present it to their stakeholders:

"I usually do the project proposal because it is a lot faster for me to put it together since I will be delivering what I have written makes things a lot easier as well. So if someone put the proposal together for your project and you are supposed to deliver it. Otherwise, it might not align with what the person requires." (Interviewee 4)

Furthermore, Interviewee 1 explained the purpose of this contractual commitment:

"The statement of work essentially becomes the contract between us and the customer about what we are going to deliver as part of the project how much we going to charge them, make sure everything are presented accurately." (Interviewee 1)

4.4.1.3.2 Company NZ 2

Projects that run in this organisation are relatively small with 2 – 3 people working on the projects. The commitment to the project is clearly identified. The respondent was concerned about the risk of information management in the organisation in particularly when information is kept with a person without documentation. When he/she leave the organisation, he will take the information away him or her. The respondent commented:

"Thing that woke me up in the middle of the night with a cold sweat was what happen if I don't go to work tomorrow, is the project going to carry on without me. ...The fear was what happens if these people

leave their job. All that knowledge in their head about where the project is and that will be lost. There is no formalisation." (Interviewee 6)

Interviewee 5 stated that documenting all processes is an important task and would help to make the job easier for whoever would be picking up the project:

"Putting together project documentation has made the organisation becomes more structured last few years. … Try to document the right things so that when some other person comes along next 5 years they know how to do things. And we have a lot of documentation on the best ways to improve the development." (Interviewee 5)

4.4.1.3.3 Company MY 1

There was no indication of how project decisions were made or how projects were discussed within the project team and with the project managers. It transpired that they did not make project decisions. All projects that arrived in their department would be delivered according to the project requirements. Interviewee 7 explained:

"We will participate as like any other vendors. The project manager will manage our proposal where we have the scope, the specification, the requirement, the timeline. We have to come out with our proposal, timeline, and budget, solution architecture, project schedule. … So, it is a refine scope." (Interviewee 7)

4.4.1.3.4 Company MY 2

Company MY 2 is mostly one way traffic where to get approval for new ideas or systems is not easy at all. There is no decision making on the table. Besides, there are a lot of verbal agreements but these agreements are never documented and there is no follow up. As Interviewee 11 suggested:

"I think documenting the decision points are all very important. Early part of the project, the key milestones should be decisive, sign off and committed." (Interviewee 11)

4.4.1.4 Performance

The respondents were asked how projects are supported by the organisation at service level or quality assurance. It is important that organisations and stakeholders are committed to bringing projects to a successful outcome.

4.4.1.4.1 Company NZ 1

Company NZ 1 is very well organised. Staff are well trained in either PMI or Prince 2. These tools provide guidelines on how to establish the governance structure for running the project. Interviewee 4 explained:

> *"Prince2 has a very good structure to use especially for someone that is new to starting out with project management. The introductory course for Prince2 gives you a very good background in project management. The Prince 2 structure helps to provide a good project journey from the initiation phase to the execution phase." (Interviewee 1)*

The organisation adopts and adapts what is the best fit for the project. Interviewees 2 explained:

> *"We structured them around PMI as well as Prince2. The company has its own company methodology and we take out bits of elements out from PMI and Prince2. ... The governance document is a step by step guideline for staff to follow like project tracking, what step to have to run the project and many other useful templates." (Interviewees 2)*

Furthermore, at the strategic level, the top management also adopts other tools such as survey or checklist. The purpose of these tools is to carry out quality control and assurance. Interviewees 3 explained:

> *"We do survey report on a monthly basis. We survey our project management on behalf of the customer to see how we are going in term of project quality measurement, time, budget, communication and how the project team is working together. There are carious questions with a combination of objective and subjective measures. This is a report tool mainly for a senior and executive management team. It highlights any issues early by a trend and groups to understand what's happening." (Interviewees 3)*

4.4.1.4.2 Company NZ 2

Projects that are run in Company NZ 2 are well organised. Resources are available to deliver the agreed project. Interviewee 6 has introduced a project management tool named SCRUM. SCRUM is a process template commonly used to oversee projects and manage complex work. Interviewee 6 explained:

> *"SCRUM is a good structure. SCRUM has a nice consistent formalised meeting where you sit down go through a list of things you have done through the week. One particular meeting we have had to discuss project design, we know stuff around all other bits which was kind of keeping the team structured. In especially agile programmers tends to do a long of quick alteration, a lot of fast changes in the code. Thus, good chances to scope who are doing what." (Interviewee 6)*

Furthermore, Interviewee 6 suggested:

> *"SCRUM might be better of a larger team or some people who have a development team are the dedicated group for design and dedicated group for implementation. SCRUM will fit well when you have the meeting with the design team about the design output and the output will go to the implementation team. You get real value in having more structure over that development." (Interviewee 6)*

SCRUM works better and is more suitable for bigger project groups. The structure of the Scrum methodology is very complex and expects many skills and character traits of people who work with it.

4.4.1.4.3 Company MY 1

Company MY 1 used PMI as a guideline to run projects. Interviewee 7 explained that they will take what is relevant and important to the particular project:

> *"We do not have a specific methodology that is adopted inside the organisation for all projects. That is because a lot of projects that we so call projects are not in a sense of big scale projects. Our projects are short term range from two weeks to two months, relatively small projects. In terms of project governance, the size of project like what we are doing, do not see how worthy is to go into that kind of methodologies and spend that kind of resource." (Interviewee 7)*

Company MY 1 also used Microsoft Project to manage projects, mainly its project implementation schedule module as Interviewee 8 explained:

> *"When we do projects, we used MS Project to follow the schedule. As a project manager, we have to write down all reports including incidents or any gaps we have; we must update the MS project file. My boss (in the case Interviewee 7) reads these remarks which were recorded in the file for all projects. (Interviewee 8)*

Interviewee 9 also confirmed that MS Project is used often in this department. It is an adequate program to use for managing the project.

4.4.1.4.4 Company MY 2

Similarly, respondents from Company MY 2 used MS Project Gantt Chart to plan projects. The organisation does not adopt any specific tools to govern project management as Interviewee 11 explained:

> *"Where I am working currently, there is no such thing about structure. Standards are too much." (Interviewee 11)*

The interviewee further explained:

> *Even if there is a standard to follow, they don't follow strict because the different project has different constraints and circumstances depending on the size of the project and who the stakeholders are and how complicated are there… yeah then you definitely need to do that." (Interviewee 11)*

Although Interviewee 11 has used PMI guideline in a previous job, they only adopted the area that suit the project.

4.4.1.5 Conformance

The respondents were asked if they adopt the external regulations and internal policies to manage each project. There was not much focus on discussing regulations and policies.

4.4.1.5.1 Company NZ 1

The respondent from Company NZ 1 explained that when a new business was bought and transited into the organisation, it was critical to acknowledge the regulations and policies between the two organisations:

"When we purchase a new business, organisation provides support from taking a business in the current format and brings their support structure from A – Z into our organisation. This includes knowledge from the supplier who may supply their services to the existing business." (Interviewee 1)

4.4.1.5.2 Company NZ 2

There was not much discussion on how they adopt the external regulations and internal policies to manage projects during the interview period of the research. However, both interviewees stated that the organisation had regulations and policies that were structured and followed accordingly for better project decision making and implementation improvement.

4.4.1.5.3 Company MY 1

Similarly, there was not much discussion on regulations and policies adoptions to manage projects during the interview period of the research. However, three interviewees indicated that projects were implemented according to the project contract agreement and requirement, therefore the project was managed based on regulations and policies.

4.4.1.5.4 Company MY 2

Similar to Company MY 1, the discussion on regulations and policies was very brief. However, Interviewee 11 emphasised that the organisation does not have regulations or policies to follow. Even if there were, a lot of these regulations and policies would be verbally mentioned and not documented.

4.4.1.6 Human Behaviours

The respondents were asked if their organisation made sure that the project team and the stakeholders were committed and motivated to deliver the projects.

4.4.1.6.1 Company NZ 1

Company NZ 1 confirmed that the organisation made sure the project team consulted and informed their stakeholders before signing the contractual agreement:

"Sitting down with customers, understanding the requirements and what they are trying to achieve… keeping the customers informed any changes in scope" (Interviewee 4)

4.4.1.6.2 Company NZ 2

Company NZ 2 also confirmed that stakeholders must be informed and consulted before beginning any project. It is important to have a person who is motivated to work on the project and drive the project all the way:

> *"A true champion not unnecessary to be a project manager; is someone true feel inspire to work on that project something that personally important to the project to them."(Interviewee 6)*

4.4.1.6.3 Company MY 1

There was no deep discussion about the connection between the organisation and stakeholders. Based on the information from the interview, the stakeholders would be consulted about any changes to the project. Stakeholders were informed in a timely manner if there were any updates or issues with the project as explained by the respondent:

> *"The organisation always makes sure that our clients communicated appropriately."(Interviewee9)*

4.4.1.6.4 Company MY 2

The respondents from Company MY 2 believed that,

> *"If we planned and you have a budget then it will be easier." (Interviewee 11)*

However, things did not get easier for this organisation. The respondent commented that the problem with this organisation that there was no commitment or motivation to upgrade the ICT infrastructure. The respondent explained that the managing director did not understand how important it was for the organisation to upgrade the infrastructure:

> *"I have told the financial director to set an annual budget so that at least it is easier to budget what we get to spend such as upgrade equipment, server and many other things. There is no budget set aside for an ICT department to spend. … Every equipment spending are expensive to them. It is all about cutting cost. There have no ideas these ICT infrastructures are non- negotiable at cost and no discount at all." (Interviewee 11)*

The respondent also made further comments:

> *"We are not able to negotiate. We have to go with the cheapest option." (Interviewee 12)*

The respondents from Company MY 2 explained that the organisation was not making their job easier as they did not have a budget allocation thus they could not plan and make decision for better implementation. Apart from this, there was little discussion on how stakeholders were consulted, informed and actively engaged throughout the project cycle. As far as the respondent was concerned, there was not much engagement between the stakeholders and the project team. There was no further discussion.

4.4.1.7 Factors Influencing the Structure Mechanism

This section describes the factors influencing the structure mechanism that were found in the field research. Table 4.6 summarises the factors. The tick "√" in the table indicates the organisation for which a factor was identified. The factors are an extraction from the NVivo software where there were nodes. These factors are discussed in subsections 4.4.1.7.1 - 4.4.1.7.6.

Table 4.6: Factors influencing the structure mechanism

Factors identified	Company NZ 1	Company NZ 2	Company MY 1	Company MY 2
Lack of organisational leadership				√
Confusion				√
Listen and treat each other with respect	√	√	√	
Lack of respectful rebuttals				√
Budget Planning issues		√		√
Organisation to be more strategic	√	√	√	√
Low utilisation of governance adoption because of time consuming	√	√	√	√

4.4.1.7.1 Lack of organisational leadership

A respondent from Company MY 2 stated that there was no organisational leadership and top management procrastinated on taking action in areas that were dramatically affecting the ICT development. The respondent stated:

> *"At the top management level - it is not easy to understand what the director wants. We tend to play a lot of mind games. There is no specific direction for us to aim." (Interviewee 11)*

The remaining three companies have a better organisational leadership. Especially the communication in Company NZ 1 is well maintained between different levels in the organisation:

> *"In respect of at the different levels like the board level, executive level, steering level and project level, I kind of sit on the side to all of that to feed my communications layer in project status, updates, etc." (Interviewee 1)*

4.4.1.7.2 Confusion

Effective communication is required to keep an organizational structure running smoothly. The respondent from Company MY 2 stated that without communication, new ideas and processes can get confused:

> *"Basically to get the top management understand what this system can do, showing them the pros and cons as well as their options. Otherwise, they will be puzzling in their head if not discussing with them. It can become quite confusing for them if you go depth discussion as well. They have no clue about ICT at all." (Interviewee 11)*

The same happens if departments are not clear on exactly what their responsibilities are and the ensuing confusion can slow down productivity.

4.4.1.7.3 Listen and treat each other with respect

The majority of the interviewees stated that treating each other with respect in the organisation is very important, especially when working together on any projects. The respondent from Company MY 2 stated that there is no need to raise voices in the meeting as everyone can hear very clearly:

"It is not easy to communicate when someone started raising their voice to get the message across. I've heard it out loud even without that person saying it. I can see that the frustration is building up every time. It would be easier to listen to someone if we can talk at normal tone and give respect to each other." (Interviewee 10)

Another respondent from Company MY 2 also stated that if you are to respect each other start by listening to each other:

"Start by listening to other people's ideas or what they want say can help make communication better and easier for working together as a team." (Interviewee 12)

The respondent from Company NZ 1 believed that respect for people is about open and honest communication:

"The main key to a successful project is to be open communication internally and externally. For instance, if we are going to deliver this on Friday and we miss the deadline or can't meet the deadline. I will be on the phone and ask them for additional day to deliver it because this person has been pulled over to another project or sick. You just need to be open with them." (Interviewee 4)

4.4.1.7.4 Lack of respectful rebuttals

This may be the most common issues found in one of the organisations interviewed. It is the conversations when someone agrees or provides positive feedback in the first part of their sentence, only to be followed by "but". After the "but" comes the other part and you end up feeling misled and unfulfilled and don't even know why. The respondent from Company MY 2 stated:

"I don't understand how staff can get very irritated over things when things are not going according to his way. I have no objection to spend big money on the equipment but at least to ask to reduce the cost is a reasonable request. I trust him doing his homework and want the best for the company." (Interviewee 10)

4.4.1.7.5 Organisation to be more strategic

A respondent from Company MY 2 stated that the organisation must have strategic planning in place. The organisation needs to know what the business is

about in order for the ICT department to develop what is required for the business. The respondent explained:

> *"This is ad-hoc. There is no budget… no formal process… no written proposal. There is no strategic alignment planning here. No one here understands ICT."(Interviewee 11)*

The respondent from Company NZ 1 confirmed that ICT and Business strategy must align:

> *"It is important that ICT and business strategy aligned together otherwise there is no value added at all" (Interviewee 1)*

4.4.1.7.6 Budget planning issues

A respondent from Company MY 2 indicated that the organisation has no budget planning. The respondent suggested the financial department set a limit aside for an ICT department to have budget planning and spending on resources that required annually. The respondent explained:

> *"I asked the financial director – and say it is important to get annual budgets. So at least it is easier to get to spend – so that I can plan my upgrade, I can plan my face out old equipment if you give me 100K. Of course I will still come back to the directors for approval if we need to spend on anything." (Interviewee 11)*

Although without budget planning, it is still possible to request funds when needed. It is an extra milestone to get it approved and can delay the project for upgrading a system or a server.

4.4.1.7.7 Low utilisation of governance adoption

The majority of the respondents stated that it is very time consuming to follow project governance procedures. There is a lot of paperwork to compile when an audit happens. One of the respondents from Company MY 1 stated that they will do a lot of photocopying in the last minute for audit purposes:

> *"Governance is all about paperwork. It is not just about guiding you to achieve your project with standards or achieve business outcomes. It is also about photocopy all papers, putting them together, making sure there are available when auditors come and do their audit. We*

have so much work to do already and yet we have to do all this paper compiling just for the audit purpose." (Interviewee 9)

On the other hand, even though it is time consuming and involves a lot of paperwork the respondent from Company NZ 1 believed that PG makes their work easier and all processes are aligned:

"It is effective to have governance to help me with my work. It makes my job a lot easier when I have governance guideline because you have all of those multiple streams, so you have got the service desk component, the database, the network, the backup, you have all these ICT processes you can possibly find: procurement, financial management, asset management all of these thing have separate procedures and they're streaming their own." (Interviewee 1)

4.4.2 PG Implementation: Process Mechanism

The process mechanism ensures that the project decision supports the organisation goals as discussed in section 2.5.2. In the comments quoted further below, the respondents described their experiences and perspectives on how project activities were tasked, managed and measured.

4.4.2.1 Responsibility

The respondents were asked to describe how the top management sets out their tasks that are undertaken to achieve the outcomes of projects. The responsibilities set out in service level agreement have to be professional and transparent.

4.4.2.1.1 Company NZ 1

The respondents from Company NZ 1 believed that first of all the organisation must be well structured in order to receive and deliver projects as customers feel confident and comfortable to work with the organisation:

"It is expected from our customer to present a weekly status report as a professional organisation. The level of professionalism is expected from the customers. There must be some form of governing for project delivery. Otherwise they would consider us not professional if we do not have a standard or guideline presented." (Interviewees 2)

Some organisations do not allow additions or changes to projects until project completion. Stakeholders require the signing a new contract to fulfil their new requirements which may cost stakeholders even more. However, with this organisation, the Project manager allows stakeholders to make changes during the project cycles and they are often willing to pay the additional cost for requesting additional staff to work on the existing agreed project. The organisation allows this change during the project cycles to keep stakeholders happy:

> *"I allow customers to add additional staff in the project and addition cost will be there. … If a project has already been signed off from a proposal and customers keep telling you need to do this and add that. You need to capture that as variations. We say we are happy to raise any variations toward anything you want additional or not part of the project scope." (Interviewee 4)*

4.4.2.1.2 Company NZ 2

Positions and titles are not permanent in Company NZ 2 where staff could have more than one position title. They wear different hats to complete the job they are doing. These did not affect the project delivery from the beginning to the end as long as the project was delivered accordingly:

> *"Nobody has a title here in the company. They can introduce themselves a developer but with different hats. Everyone wears different hat depend on what they are doing. Some projects, I am the project manager." (Interviewee 5)*

Interviewee 6 also commented:

> *"I wear different hats. The project manager is mostly being a lead developer. At the same time, you might be involved someone else project as a developer as well or testing product people to check their work. One of the company's goals was for the customer to come in to talk to the people who are going to do the work rather than having a delicate sale team." (Interviewee 6)*

In addition, Interviewee 6 commented that there are very few organisations that allow stakeholders to make changes in the middle of the project cycle and commented,

"The founding idea about agile development is quite flexible in term of specifications." (Interviewee 6)

4.4.2.1.3 Company MY 1

The respondents from Company MY 1 confirmed that all project decisions were made by appropriate personnel. Any decisions made would be communicated to stakeholders before passing them down to the project team to begin working on the project:

"We have to work closely together with our customers. One contact person from the project team will be assigned to do communications between customers and team. The benchmark is the project is delivered." (Interviewee 7)

4.4.2.1.4 Company MY 2

The respondents stated that there was no decision making strategy in the organisation. The top management minimise any costing:

"That is the problem when the impression from the top is that he wants to minimise cost. So we will do things to minimise cost because with the given decision although not documented again." (Interviewee 11)

Furthermore, decision making is not strong in the ICT department either. The respondent further explained that one staff member makes decisions without consulting the director:

"The regime has been suspended few months ago because of the server performance has some issues. They decided not to load up the server so they abandon the regime. When the server died, there was not any backup recovery and I was not aware of the backup was on the same server. There was an undocumented backup regime took place." (Interviewee 11)

4.4.2.2 Strategy

The respondents were asked if they were strategically following any process when running projects.

4.4.2.2.1 Company NZ 1

The respondent confirmed that the strategy - making process was the growing effect of day-to-day prioritisation decisions made by project managers, engineers, service delivery managers and financial staff. The respondent explained that there were several phases in a project. The respondent first of all is to provide a checklist to each team to enable them to carry out the project. Discovery work will be their next phase. This is when the team analyses the company's system and then to match back to the contract of what was sold to the stakeholder. The planning phase and knowledge acquisition tie together. These are all different phases of getting the contract committed to implementing the system to go live. The respondent explained that the system should be tested to make sure it is running appropriately and meeting the requirements. The organisation also requires training the staff to use the system. The respondent explained:

> *"Those are the strategies and structures of how I governed and making sure we have met all those variables. There are different phases apply depending on the organisations. Some companies, the respondent take over everything including existing development into the organisation system and then gradually improve the system." (Interviewee 1)*

4.4.2.2.2 Company NZ 2

A respondent stated that there is no single standard process for how the project should be done in a particular order. The process for how the project should be done in the organisation is based on experience depending on the project as explained,

> *"I decide who does the work depend on workload, type of work, what people I have got, what project I have got and it depend on what the project … we have more experienced and less experienced software people. Some projects that we know will be better suited to more experienced guy and some projects we have one senior guy's supervisor the project and have the junior developer will do most of the work." (Interviewee 5)*

It is important to get the right team to deliver the project. In order for the team members to deliver the project and to meet the project goal, the respondent stated

that the organisation would communicate with customers to find out the business requirements and how the ICT team can help to support them:

> *"Finding out what need to upgrade or develop, a lot of discussion with the customers of what they want, making sure we are clear about what they want, working out of the specification for the project and then we will write a proposal of some kind." (Interviewee 6)*

4.4.2.2.3 Company MY 1

Similarly to Company NZ 2, there are no formal processes that they must follow to deliver the project in a specific way. The top management approves all projects that arrived in the department and passed down to the project manager to manage the project. Some projects may be outsourced to external contractors if the organisation does not have the resources or tools to implement the system:

> *"We also transfer some of these projects to our sub-contractors. …we will actually get at least 2 – 3 partners to propose in term of costing for materials and for work. Our role in this project we will manage the project on behalf of our customers. We become the representative of our customer to manage these groups of people who will be actual laying down of cables, testing of cables … all these are agreed and discussed up front before the proposal." (Interviewee 7)*

4.4.2.2.4 Company MY 2

The respondent said that Company MY 2 had a different approach and it was quite challenging for a small ICT department to plan strategically if top management could not be clear with decision making. The respondent explained:

> *"We do a lot of verbal proposals. We suggested and then wait and see their reaction. … It is a big challenge for a small ICT department in this organisation. When things happen especially causes losses to the company, then suddenly things become urgent. … Basically, to get the executive teams to understand what this system can do and show them the pros and cons of this development. At least we hope to bring them at the same level of*

understanding. Often you don't get an Okay straight away." (Interviewee 11)

The respondent had to convince the top management to support the proposed project and would take any opportunity to remind the top management about the proposed option. In fact, the respondent actually implemented and tested the application before he put forward the proposal:

> *"Before we proposed this, we actually ask the software developer to test out all the sms services as well as the technical side. Once the organisation wants it, we will make up the web page, training, monitoring the application system." (Interviewee 11)*

The respondent further explained the reason for developing this application before submitting the proposal to the top management for supporting the application. The cost of this project was low, the risk of project failure was small and the damage to the organisation would be minimised as explained:

> *"Because this is within internal organisation, I am the director in charge of ICT also has authority over other things such as the authority and power to do a few things without going through the financial department approval." (Interviewee 11)*

However, certain ICT improvement or upgrading was unavoidable. The respondent brought up the server issue to the top management attention. The respondent was asked to reduce the cost of upgrading the server and suffered some losses when the server failed. There was no immediate action to upgrade the server when the server failed the business stopped. The whole server replacement actually cost the organisation double than the initial cost of upgrading:

> *"Because the servers failed and so we spent a lot of time during recovery finding out and buying a temporary server to get the businesses going. … IT cost more money than initially proposed … There is no budget. There is no strategic planning. There is no formal process." (Interviewee 11)*

The top management acknowledged the issue but ignored the urgent request completely. They did not see the importance of alignment between ICT and the business. The organisation failed to prioritise the importance of ICT and mainly focused on reducing cost.

4.4.2.3 Investment

The respondents were asked how projects were measured and decided. There were various responses in the area depending on their views.

4.4.2.3.1 Company NZ 1

The respondents stated that the project was decided based on the requirements of the stakeholders and the decisions agreed by both stakeholders and the project team. The respondent explained:

> *"We will make a response to a request for proposal. In each organisation, the structure may look the same; the content will be amended to suit the specific business specification for their organisation." (Interviewee 1)*

Then the contractual agreement would be signed and this would be the contractual commitments as the respondent explained further:

> *"The contractual commitment is the master service agreement. … That is a legal document de command. Then we write service schedules. So we sat for that component of your business how well we manage it, what is our responsibility, what is your responsibility, because it will be a complete responsibility as well. What is included in the delivery of that component or what is excluded, what's the cost, what the service levels, across that is a big part of the governance level any of the project disaster service levels that become our KPI." (Interviewee 1)*

4.4.2.3.2 Company NZ 2

The respondent has a different view to that of Company NZ 1 on how the project is measured and decided. There are different types of project investment in this organisation. One type would be the projects that are driven by finances and the funding for the project is granted by the government as explained:

> *"We do a lot of work for university in the library. A lot of their money comes from the grant and the grant cycle is pretty clear cut. Everyone tends to hold onto the grant tight and thinking if it would last them through till March or April. So when come around*

March/April, all these works started to speed up and these people have to spend all grants before it disappears." (Interviewee 6)

Since the organisation could not rely solely on the above project type, the organisation also received projects from other places such as a library in the USA. The type of project work would depend on the project size and customer type. The respondent explained:

"If a small project says $5000 budget, then we can't spend one to two days on the proposal. This will be a direct approach where they contact us through email and we replied back to the email to saying "yes we can do that" and give them more information and the price. They can say yes or no. We have to approach things very differently because we have to. We can't spend days or weeks preparing or trying to sell our project that the project only worth $5k." (Interviewee 5)

The respondent further explained,

"Most of our customers are institutional libraries. We have to go through a tender process with them. This probably involves going through a lot of people for decision makings and it is going to take a long time. You can spend that amount of time on that kind of projects just because of whom they are and the big project budget." (Interviewee 5)

4.4.2.3.3 Company MY 1

On the other hand, the respondent from Company MY 1 accepts whatever project comes. The respondent explained that their department was only expected to deliver the projects by what was required by the stakeholders:

"Budget approval is not at our end. 100% owned by the group. Whatever we deliver, the money goes back to the group. The group doesn't expect us to make money. Our benchmark is more on delivery of what we promise and not so much on making money." (Interviewee 7)

4.4.2.3.4 Company MY 2

Company MY 2 had a different approach to how projects are invested in without decision making from the top management. There was no request of written proposal. The proposal would be discussed verbally and not documented; the respondent explained that the weakest thing in this organisation was decision making and documentation. The respondent saw the opportunity to improve their services to the stakeholder and went ahead to implement the system without the top management approval and made the following comments:

> *"We see a lot of opportunities and potential for implementation that we can improve. We verbally mention them. Whenever there is a problem in the organisation, we will again remind them if you want to improve it. It is a big challenge when we have a small ICT group. The company has not done many formal proposals." (Interviewee 11)*

The organisational culture was to propose ideas verbally, then sit and observe the reaction. Sometimes, the respondent implemented the system without approval and was aware his/her action was risky.

Furthermore, the respondent stated that an unwise decision was recorded that was made without consulting the manager in the department and some damage inflicted to the business. This was due to inadequate communication and caused monetary loss to the organisation and caused frustration to staff:

> *"I told the team that he made a lousy decision but he is lucky to get away with it. It could be very bad. We told the users from the accounting department, billing department and all other departments that they might have to re-key all data from past 14 days. It is one expensive cost to business and super frustrated staff. (Interviewee 11)*

4.4.2.4 Performance

The respondents were asked what steps or processes they would consider appropriate for managing a project. The respondents from NZ companies provided information on their experiences and their perspectives on project processes.

4.4.2.4.1 Company NZ 1

The respondents believe that the stakeholder and the organisation are committed to delivering the project:

> *"First, the initiation phase would properly be sitting down with the customers, understanding the requirements, what they are trying to achieve. And then putting that down on the statement of words, documenting it and then get them to sign off." (Interviewee 4)*

The same respondent made sure the project team had an adequate resource commitment to achieve the agreed project outcome as explained:

> *"For a successful project is getting them involved in the proposal stage. I discuss with them what we are going to do. I also get them to review the proposal as well as to make sure the tasks listed are accurate and the delivery hours are sensible. All these meetings and communications are to ensure they know beforehand that this may be a potential project." (Interviewee 4)*

This respondent also stated that the project manager controlled project planning and management processes so that the project achieves its outcomes in an efficient, effective and acceptable manner. The respondent made sure the quality of the services to stakeholders was professional from the beginning of the project. The performance of delivering the project must be tracked and the quality of the service provided to stakeholders must be measured:

> *"The proper planning phase is to do the project. And then execution phase getting the work done, keeping track of the quality to make sure they delivered what the business required. It is also keeping customers informed of any changes in scope or the usual things during the execution phase. And then the closure really which is to hand over to the support team to check make sure we tick off everything we delivered. Close it and then gets signed off for it." (Interviewee 4)*

In addition, the respondent also commented that apart from keeping the stakeholders satisfied with the delivery services, the project manager must also clearly understand the whole project management process to ensure the agreed deliverables meet project requirements:

"There are two levels of quality controls. There is technical quality control which is to review the quality of technical deliverables to the customer's requirement. … We also do this quality assurance for project checklist across the project managers to ensure the project managers are following the process." (Interviewees 3)

The respondent also discussed how important it was to do a project checklist. Project checklist is a checklist that allows project teams to be aware of any issues earlier and to reduce risk. He made the following comments:

"I should run more project checklist on a regular basis so that we can pick up any issues early and then remind them to correct it before it is too late to make the improvement. Just that we run this helps check sometime means that the project managers are more conscious and more aware and making sure following up things. Project checklist somehow I put in placed but I am not rigorously running those project checklists due to due to time and economic constraint." (Interviewees 3)

Although the respondent has not been running the project checklist rigorously, he/she sees the benefit to do the project checklist and would consider doing it on a regular basis in the near future.

Furthermore, a log book was mentioned by one of the respondents in the organisation. Such a logbook would be maintained from the beginning to the project completion. After each project completion, the project team will meet to discuss and analyse the project:

"One thing we do toward the end of the project is a "lesson learn log" as well for the next new project. We sit down with all the team and discuss what we could have done better and what other way could we have improve or to avoid issues. You learn as you do all these things." (Interviewee 4)

4.4.2.4.2 Company NZ 2

Similarly to Company NZ 1, project planning and management were clearly identified in Company NZ 2 where it was arranged for team members to follow a project schedule. The team clearly understood the requirements and individual, roles and responsibilities to ensure they had the capability to deliver the project

and the agreed deliverable to meet project requirements. The respondent explained that SCRUM was used to manage projects at one stage:

> *"I will use a bit of SCRUM that I like. Therefore, you can fit everything into one package. SCRUM is part of agile software development. Agile kind of have a big idea in SCRUM is one method for applying agile development. It is a project management structure, framework. As a project manager has a book about SCRUM that will tell you step by step what to do." (Interviewee 7)*

The respondent further explained that the organisation had developed a time-tracking management system for staff to keep track of the project:

> *"We have developed a time tracking management system. With the time tracking management, it is certainly helpful and successful tool to have when running a project. This system provides information to keep track of the project as well as a record of how many hours have been spent on each project. It is really challenging to quote for a project. So many things can go wrong with them. It is difficult to judge or plan. With this system, we can get provide a close estimate of hours to be contributed in the new project." (Interviewee 7)*

4.4.2.4.3 Company MY 1

The respondent stated that due to inadequate resources in the department some projects were delivered by external contractors. The respondent explained:

> *"We also transfer some of these projects to our sub-contractors. Our role in this project we will manage the project on behalf of our customers. We become the representative of our customer to manage these groups of people who will be placing down of cables, testing of cables and the scope example we are talking about infrastructure is the LAN, routing, the route of the cabling." (Interviewee 7)*

Otherwise the organisation assigned a team to deliver the project. The mechanism of managing projects was to adopt same methodology to manage projects. Although there was no specific discussion of quality control or quality assurance of the project delivery, the respondent mentioned that the team observed the post-

project implementation closely to ensure the system was working appropriately. The respondent explained:

> *"Not only important to measure at the post implementation. For us, it is a must. As for us, the project implementation may schedule for 4 – 6 months, and then we must reserve another 4 – 5 months of observation status of the post implementation. (This is free). Once everything is stable – we will receive a certificate for completing the project. Within those 4 months we will have staff observing and look after the post implementation." (Interviewee 8)*

In addition, the PMI guideline was also used to deliver projects. This included risk management to ensure projects were managed appropriately and to create value as explained:

> *"In term of guideline for the project as well as corporate governance, we do follow and be guided by these guidelines. This includes risk management project what we are doing is low risk to us as well as to customers." (Interviewee 8)*

4.4.2.4.4 Company MY 2

On the other hand, Company MY 2 had a different approach as the respondent stated that there was no guideline adopted to help deliver the projects:

> *"There is no formal process. If you want to audit the process, there is not much to see on the paper." (Interviewee 11)*

The respondent stated that staff employed in the organisation had very limited skills in the ICT department. The respondent explained:

> *"I would say most of the time it's just personal choice. Properly a lot of bias in there like if web programming project – I would prefer one of the senior programmers to work on the project. (Interviewee 11)*

The respondent further explained:

> *"If it is something simpler, low risk project, I will give the inexperienced guy to work on the project to develop his programming skills. This means the damage is not great if the project fail. (Interviewee 11)*

4.4.2.5 Conformance

The respondents were asked about how the project regulations and policies were identified and measured.

4.4.2.5.1 Company NZ 1

The respondent from Company NZ 1 described that appropriate regulations, policies and practices help the project team to deliver projects efficiently. The respondent gave an example of a stakeholder with highly mature processes:

> *"The company had business documentation for every process they follow that we could use or align ourselves with. There are extremely mature in every aspect of their own business governance." (Interviewee 1)*

In comparison, the delivery of some other projects was complicated. There was no documentation recorded which made it difficult for the project team to deliver the project. The project team generated documentation on the customer's behalf. Thus, this resulted in the project being delayed, as it required more time and effort. The respondent explained:

> *"We can do a lot of documentation based on our processes but does it align with what the customer wants? So for everything I do, I need to have business policies and processes as well. I will negotiate how to do at my best practice." (Interviewee 1)*

On the other hand, the respondent explained even though if the organisation has a good regulations, policies and best practices for making project decisions, it might not fit into what the stakeholder's needs. A project team was required to depend on what the stakeholder's requirement was and applied appropriate regulations, policies and practices to deliver the projects. The respondent explained:

> *"We could sell one gold technology system that is amazing if they may suit the business. But it is not from documentation perspective, not from implementation perspective and not from an operational perspective. We have to modify it and be flexible with it. … Even if they would afford a system but it may not be suitable for their business. So that is why it is important to understand the requirements, expectations so that we can modify it." (Interviewee 1)*

The remaining respondents were not focused on discussing the implementation of regulations, policies and practices. Although the implementation regulations were not discussed, there was discussion on how the implementation processes were monitored for quality assurance and risk management. The respondent from Company NZ 1 used a project checklist to monitor projects. This was due to certain characteristic of projects that might be high risk in term of the successful delivery as the respondent commented:

> *"We do risk assessment for the project as well. … We spent more regular project checklist on project highlighted as high risk category. The project checklist monitored closely in loop on project management quality on implementation reviews." (Interviewee 3)*

4.4.2.5.2 Company NZ 2

During the interview period of the research, there was not much discussion on how they adopt external regulations and internal policies to manage projects. However, both interviewees stated that the organisation had regulations and policies that were structured and followed accordingly for better project decision making and implementation improvement.

4.4.2.5.3 Company MY 1

Similarly, there was not much discussion on regulations and policies adoption to manage projects. However, three interviewees indicated that projects were implemented according to the project contract agreement and requirements; therefore the project was managed based on regulations and policies.

4.4.2.5.4 Company MY 2

Similarly to Company MY 1, the discussion on regulation and policies was very brief. However, Interviewee 11 emphasised that the organisation did not have structured regulations or policies to follow. Even if there were, a lot of these regulations and policies were only verbally mentioned and not documented.

4.4.2.6 Human Behaviours

The respondents were asked how the organisation would interact with their stakeholders throughout the project life cycle.

4.4.2.6.1 Company NZ 1

The respondents described their experiences and perspectives on cases when the organisation runs a project on behalf of their customer. It is important to keep stakeholders informed and actively engaged in the project cycle. The organisation makes sure the customer understands and is involved in decision-making. The respondent from Company NZ 1 explained:

> *"Sometime what happen was there were a lot of decisions made without consulting the customer and this is very dangerous… and so making sure the right people and having the right conversation and the decision need to be made by agreement with the customer."(Interviewees 2)*

In order to keep their customers consulted, informed and engaged with the project team activities, the organisation must begin this process from the initiation phase to make sure the stakeholders agreed to the timeline of project delivery. The respondent explained:

> *"It is important to have a key representative to make this communication for keeping their customer involved and informed. Sometime we need our customer to come to the workshop listening and knowing what is happening. So that customer can sign off the contract of agreement once they are happy with the design or proposal. Then we can continue the next phase."(Interviewees 2)*

The Project manager motivates the team to work on the project by providing information and knowledge of the project. Sometime, the organisation uses the project checklist to measure the performance of the project. The project checklist is a check list for quality assurance. The respondent explained:

> *"We do quality assurance using project checklist across the project managers to ensure the project managers are following the process. It allows us to be aware of the issue earlier and help project managers how to improve." (Interviewees 3)*

The respondent also admitted that it was costly and time consuming to run project checklists. However, if there is no tight financial constraint, project checklist on a regular basis would be useful as described below:

"If I do project checklist on a regular basis which I don't have it at the moment, then we can pick up early and then remind them don't forget to do this before it's too late to make the improvement." (Interviewees 2 and 3)

On the other hand, project teams can become uneasy and feeling untrustworthy if project checklist is carried out on a regular basis. The organisation needs to trust the project team to deliver the project with confidence. Likewise, an organisation needs their customers to trust them to deliver the project as agreed:

"I have to make sure people to trust me for transiting their office into our support. At the same time those people internally that have been doing the work are equally important to me to trust me. Because if I don't buy in from them I am just going to struggle. So I treat them as any clients because they are centrally delivering the work." (Interviewee 1)

4.4.2.6.2 Company NZ 2

Company NZ 2 stated that the stakeholders must be informed and consulted before beginning any project. It is also important to have a person who is motivated to work on the project and drive the project all the way as commented by Interviewee 6:

"Have somebody to keep driving the project forward such as a champion. A champion is someone true feels inspired to work on project and drive the project to the ends." (Interviewee 6)

4.4.2.6.3 Company MY 1

The respondent indicated that the project process is clearly understood and communicated to stakeholders. Given the company has a handful of staff only, the project team has no other option but to work on these projects whether they like it or not:

"We make sure that our clients are well looked after by the team. Making sure all sorts of relevant communications like emails, telephone, etc.) is available with our client. They get the utmost information or report for every stage we developed will be sent to our client by email." (Interviewee 9)

4.4.2.6.4 Company MY 2

However, the respondent from Company MY 2 had a different view about how to get staff motivated and trusted. The respondent was very relaxed if a project was not completed in a timely manner. Staff is not pushed too hard and making staff to enjoy working on the project at their own pace with no pressure:

> *"I just think sometime these guys have more important thing in their life than delivering this project. For example, if there have a family issue concern – like your kid is sick – I will tell them to go home and bring their kids to see a doctor.." (Interviewee 11)*

The respondent believed that staff would return back to work and could be more likely to focus and be motivated to complete the project. The respondent admitted being confrontational was his weakness when comes to communication.

4.4.2.7 Factors Influencing the Process Mechanism

This section describes the factors influencing the process mechanism that was found in the field research. Table 4.7 summarises the factors.

Table 4.7: Factors influencing the process mechanism

Factors identified	Company NZ 1	Company NZ 2	Company MY 1	Company MY 2
Lack of commitment and engagement from top management				√
Managers to take project improvement Seriously	√	√	√	
Scope Creep				√
Lack of funding		√	√	√
Lack of documentation				√
Lack of information				√
Records management	√	√	√	√
Overkill project budget				√
Lack of risk management				√
Run checklist regularly	√	√	√	√
Encourage Project governance adoption	√	√	√	√

This section describes the factors influencing the process mechanism that was found in the field research. Table 4.7 summarises the factors. The tick "√" in the table indicates the organisation for which a factor was identified. The factors are an extraction from the NVivo software where there were nodes. These factors are discussed in subsections 4.4.2.7.1 - 4.4.2.7.11.

4.4.2.7.1 Lack of commitment & engagement from top management

The respondent from Company MY 2 stated that without the top management support the organisation could not improve. It is not easy to reach out to the top management for support as explained:

> *"Initial budgetary, just verbally discussing of costing information for a server and his reaction was – wow you need 40K – 50K to get a new server." (Interviewee 11)*

A person in a lower position does not have the authority to make changes to the project requirements as this requires commitment from the top management. The organisation suffered data loss and increased cost.

Furthermore, the respondent explained that a proposed ERP system that could save money and time for the organisation had been introduced to the top management which can. The top management chose to ignore the proposed idea and it was never approved. However, the respondent developed the ERP system regardless, hoping that one day the organisation would need it and it would be there ready to use:

> *"We see opportunities in the business we can improve. We verbally mention them. Whenever there is a problem in the business, we will again remind them if you want to improve it."(Interviewee 11)*

Also, the respondent stated that there was lack of engagement among all these different directors in the organisation. For this reason, the respondent could only do their best and keep reminding these directors about the opportunities for ICT improvement.

4.4.2.7.2 Managers to take project improvement seriously

As mentioned in section 4.4.2.7.1, the commitment from top management is essential to support the organisation decision making, regarding project

improvement. The respondent from Company NZ 2 suggested that leading by example would bring the whole project forward:

> *"A person who is a champion and really in charge driving the project forward. This campaign will do a lot of communication between colleagues." (Interviewee 6)*

If a senior manager doesn't support project improvement, neither will the rest of the organisation. The respondent explained that it would be difficult to provide support when the team is not organised and well-structured:

> *"I may not have the ICT knowledge in the company. At least I know the ICT department needs to shape up a bit by improving the way how they manage the ICT issues." (Interviewee 10)*

4.4.2.7.3 Scope creep

The respondent from Company MY 2 stated that the current ICT system used in the organisation is not properly defined, documented, or controlled. The organisation that developed the system did not provide any documentation to support the system and for staff training:

> *"A company that develop the ERP system that we are using is a locally built ERP system and it is based on visual basic. Later, the company brings the two senior programmers in from that company to manage the ERP system. The ERP system developed with completely no documentations." (Interviewee 11)*

In addition, the respondent also stated that the top management was only concerned about saving money for the organisation and completely ignored the need to upgrade an unstable server. As a result, the server crashed and this required a much more costly solution:

> *"We have had a problem with the server performance at least 6 months now. We have been talking about upgrading the server which is the cheapest option. The conversation about costing was pretty brief and vague between us. The server died two weeks after that and everything becomes more expensive." (Interviewee 11)*

The respondent from Company NZ 1 indicated that one way to avoid scope creep is to have project governance. Projects must be managed by the project team as well as governed by the top management:

"The governance level is really needed to make sure that what we provide and support at the end meets the customer's requirements and expectations are kept and in control. This is to also avoid scope creep." (Interviewee 1)

4.4.2.7.4 Lack of funding

One of the funding issues found in this research study was related to projects where is provided by the government. The respondent from Company NZ 2 explained that it was not easy to plan their projects as many projects they worked were government funded:

"A lot of their money comes from the grant and the grant cycle is pretty clear cut. Everyone tends to hold onto the grant tight and thinking if it would last them through till March or April. So when come around March/April, all these works started to speed up and these people have to spend all grants before it disappears." (Interviewee 6)

Another funding issue was that the organisation did not allocate any budget to each department for upgrading or organisational development. A respondent was required to go through several levels of approvals before funding was approved to solve issues such as upgrading a server:

"There is no budget which makes it difficult to work sometime. Most of the time, the tendency is for us to do less than what we can do. Because whenever you mention a price, from the most replies from a director or boss like "Wow so expensive ah". (Interviewee 11)

4.4.2.7.5 Lack of documentation

The respondent from Company MY 2 stated that there was no documentation available in the organisation, especially in the ICT department:

"The ERP system developed with completely no documentations. Any decision points have not been documented on paper." (Interviewee 11)

Similarly, the respondent from Company NZ 2 stated that there was a risk when information was not documented, especially when a staff member hold on to information valuable to the organisation:

"The fear was what happens if these people leave the work. All that knowledge in their head about where the project is and that will be lost. There is no formalisation." (Interviewee 7)

However, the respondent from Company MY 1 stated that preparing documentation is time consuming and involves a lot of paperwork:

"There is a lot of work to do when it comes to documentation. We don't have time to do all this paperwork as we have been busy with our projects." (Interviewee 9)

4.4.2.7.6 Lack of information

As described in section 4.4.2.7.6 a lack of documentation has been found in the research study. This also causes information loss:

"There was an undocumented backup regime took place. Apparently the regime has been suspended in the past few months because of the server performance issue. Instead of reporting the issue, a decision was made without consulting the manager and some data was lost." (Interviewee 11)

4.4.2.7.7 Records management

Documenting everything down in digital format or on paper is an important task of project development. The respondent from Company MY 2 strongly supported the importance of documenting down any decisions made, agreed, said or completed:

"Documenting the decision points is all very important. Early part of the project, the key milestones should be decisive, you sign off from things then you can move on." (Interviewee 11)

The respondent from Company NZ 1 explained how documenting could help to understand the stakeholders' requirement and the project delivery:

"We used handbook to record everything about the company like a financial report, operation report or any reports for data analysis and then provide them with information and recommendations as well as our services improvement opportunity." (Interviewee 1)

The respondent from Company NZ 2 also indicated how the organisation is keeping track of project development using a time tracking management system:

"We have developed a time tracking management system to provide information on project progression as well as a record of how many hours have been spent on each project." (Interviewee 7)

4.4.2.7.8 Overkill project budget

The respondent from Company MY 2 stated that the decision made by the top management to seek out cheaper options ended with doubling the cost:

"There is no budget. There is no strategic planning. There is no formal process. The servers failed and cost more money than initially proposed. " (Interviewee 11)

4.4.2.7.9 Lack of risk management

There is no risk management in Company MY 2 where the respondent stated that a project was developed before getting approval from the top management. The respondent stated that there were resources available and the costing was not great:

"Before we proposed this, we actually ask the software developer to develop this web application and test run the sms services as well as the technical side. Once the organisation urges this system, it is up ready to use and we will make up the web page, training, monitoring the application system." (Interviewee 11)

One way to manage project risk is to use certain tools to help assessing and measuring the risk. The respondent from Company NZ 1 indicated that the project checklist is regularly used to monitor the project risk:

"There are certain projects that are high risk project in term of successful delivery. There are high risks to us as an organisation to delivering the project. Risk assessments will be done and measure using project checklist regularly." (Interviewees 3)

4.4.2.7.10 Run checklist regularly

The checklist is a common recommendation and practice in project management and is done regularly throughout the project cycle. The respondent from Company NZ 1 indicated on the organisation has quality control over the project as it uses project checklist:

"We use the project checklist to ensure the project managers are following the process." (Interviewees 2 and 3)

The respondent further explained the usefulness of this project checklist:

> *"The project managers are more conscious and aware of any issues earlier and help project managers how to improve. We discussed all things that are right and point out what aspect has been slipped and hand over to the support team for any corrections that has been picked up by the project checklist." (Interviewees 3)*

Apart from the project checklist, they also use a log book for the project:

> *"One thing we do toward the end of the project is a "lesson learn log". We sit down with all the team and discussed what we could have done better and what other way could we improve or to avoid issues for the next project." (Interviewee 4)*

Similarly to the recommendation from Company NZ 2, a tracking system for the project was supposed to track bugs but turned out to be more useful for tracking project time:

> *"Instead of bug tracking, it is certainly helpful and useful tool to have the time tracking management when running a project. This system provides information to keep track of the project as well as provide a close estimate of hours to be contributed in the new project."(Interviewee 6)*

4.4.2.7.11 Encourage project governance adoption

More than half of the respondents believed that a project would be completed effectively when top management uses PG. The respondent from Company NZ 1 believed that:

> *"If we don't have governances, we will be losing out of money from that project properly. If we have governance with the structure and standard. We can have more accurate estimates the statement of work, project improvement and make money. This will provide value to the organisation." (Interviewees 2)*

This is also confirmed by another respondent from the same company:

> *"Absolutely yes I believe PG adoption creates guideline, ease and most of all create value." (Interviewee 1)*

The respondent from Company MY 1 also agreed:

"I will bring Project governance to the company if suitable. I am happy to use project governance if it is really benefiting the project team. I also believe our work, our job scope, our task will be structured accordingly." (Interviewee 8)

However, some respondents believed it would create chaos for the organisation, especially if PG is adopted for small size projects. It would create a lot of unnecessary workload for team members:

"Governance is all about paperwork. It is not just about guiding you to achieve your project with standards or achieve business outcomes. Depend on the project size and not every project can follow governance" (Interviewee 9)

Furthermore, the respondent from Company MY 1 added:

"Besides, I have worked in the UK. At that time, all these governance methodologies like PMI, PRINCE2, or PMBOK were very hot topics. I see those companies that adopt these methodologies and projects failed and some companies went down to liquidity. I seriously don't see the value for the organisation to invest in one of these PG. So far I haven't seen anyone that fit the organisation. (Interviewee 9)

The respondent from Company MY 2 also agreed and stated that a project success depended on the project manager in terms of their strategy and skills:

"It's really depending on the project and the strategy and skills of Project manager to decide when and how and what tool to use at any given time." (Interviewee 11)

4.4.3 PG Implementation: The People Mechanism

In the comments below, the respondents described their view on how communication of information between project teams would help them achieve their expected project outcome.

4.4.3.1 Responsibility

The respondents were asked what makes projects work. Many respondents believed that good communication between people involved in a project helped to run the project effectively.

4.4.3.1.1 Company NZ 1

The respondent from Company NZ 1 strongly believe that it is important to have good communication to project success made the following comments,

> *"Communication is super critical. … In particular, open communication both internal and external from customers is the main key to project success." (Interviewee 4)*

4.4.3.1.2 Company NZ 2

The respondent from Company NZ 2 also agreed that:

> *"What makes project works is communication. It is to ensure that the project, the overall project requirement and expectation has been understood by team members. Getting the technical stuff right is not as important as communication. The project will turn into custard if there is no good communication. (Interviewee 5)*

4.4.3.1.3 Company MY 1

The respondent from Company MY 1 explained:

> *"The communication and project team spirit are very important for project success. As a project manager, I ensure to provide the project team with information by communicating with them. (Interviewee 8)*

4.4.3.1.4 Company MY 2

The majority of the respondents believed that communication is an essential tool to get projects completed. Communication is also important within the project team to prioritise project activities. A good team work environment is also important. However, the respondent from Company MY 2 felt that they only did what was necessary for their jobs and made the following comment:

> *"There is no team work. We only work together when we need to analyse data, meet together, meet with clients, and decision making. Then the project will be assigned to whoever has the expertise." (Interviewee 12)*

4.4.3.2 Strategy

The respondents were asked how the teams were selected to deliver projects. Some respondents believed that it was important to have the right person with the right skills to work on a project.

4.4.3.2.1 Company NZ 1

In this case, the respondent from Company NZ 1 explained that the personnel selected to work on a project are highly skilled, professional and the use of ICT knowledge is there to complete their task:

> *"We have to go through the correct channels. So if you need a window engineer, you have to log a job and department manager will see what the job is about and assign to whoever is appropriate and available to do the job." (Interviewee 4)*

4.4.3.2.2 Company NZ 2

The respondent from Company NZ 2 had a handful of ICT staff working in the organisation. However, the strategy of selecting staff is slightly different to that in Company NZ 1. The respondent explained:

> *"I decide who does what work depend on workload, type of work, what people I have got, what project I have got and it depends on what the project is so obviously we have more experience software people and some less experience people and so some projects that we know will be better suit to more experience guy so we wait until we can fitter with them and some projects we will get one of the less experience people do with supervision so it is our kind of small team thing usually a pair." (Interviewee 5)*

Regarding SCRUM, the respondent suggests:

> *"I will not follow how the group is divided. The term use in SCRUM has a weird term. I can understand where SCRUM is getting into but I won't do that. Instead I will split them up into different meeting so you are mixing these two groups of people." (Interviewee 6)*

4.4.3.2.3 Company MY 1

The respondent from Company MY 1 commented on the issue when bringing in contractors to work on the project. The respondent would carefully select the group to work on the project as explained:

> *"We will select people or team based on our own confidence who we think can do the work better. We will negotiate the price on behalf of our customer." (Interviewee 7)*

However, the same respondent from Company MY 1 did not have much choice when selecting people to work on the project internally. The respondent explained:

> *"Not so much of a selection. I don't have a lot of choices of selecting staff. I only have a hand full of engineers and these are the people that must go. … We have staff with many of infrastructure work experiences as well as new people come and tag along to familiarise them with the jobs. So that's how we develop people and select people to participate the project. (Interviewee 7)*

4.4.3.2.4 Company MY 2

The respondent from Company MY 2 had a mixed approach and stressed that delivering a project is not the only issue that had to be considered. The respondent had to ensure the personal development of individual staff. The respondent explained:

> *"Depend on … I would say most of the time it's just personal choice. Properly a lot of bias in there like if web programming project – I would prefer one of the senior programmers to do it. If it is something simpler and if I want to give this guy a chance to develop his programming skill and the project is not too critical if it fail and the damage is not great then I may decide to give another guy a chance depend on circumstances. Depend on criticality, the complexity of the project and a lot of things." (Interviewee 11)*

4.4.3.3 Investment

Investments in projects need to be made for valid reasons, on the basis of appropriate and on-going analysis, with clear and transparent decision making to ensure projects and project priority contribute to business strategy.

4.4.3.3.1 Company NZ 1

The respondent from Company NZ 1 commented that the project team members and stakeholders must agree on the project proposal before starting the project. The organisation gets their people involved in the project proposal discussion to analyse the importance of the project, the value of the project, how would the team achieve their project goal, identify risk that can be minimised and controlled for a project's success. Hence the project team members must have a deep understanding of the project requirements and of every single detail from project budgeting. The respondent explained:

> *"One of the key things that I believe for successful project is getting the people involved in the proposal stage. I … discuss with them what we are going to do, analyse the proposed investment… review the proposal to make sure all tasks are listed correctly and the budget is reasonable to deliver what we need to deliver. Hence, this interaction also allows them to know beforehand that this may be a potential project." (Interviewee 4)*

4.4.3.3.2 Company NZ 2

On the other hand, the respondent from the smaller organisation commented that the director was directly involved from the beginning to the end of the project. The other people involved may be a project leader for the project, customer manager for customer relations and a software developer to develop the system for the project. The respondent explained:

> *"I decide who does the work depend on workload, type of work, what people I have got, what project I have got and it depend on what the project is so obviously we have more experience software people and some less experience people and so some projects that we know will be better suit to more experience guy so we wait until we can fitter with them and some projects we will get one of the less experience people do with supervision so it is our kind of small team thing usually a pair." (Interviewee 5)*

4.4.3.3.3 Company MY 1

Similarly to Company NZ 2, the respondent indicated that the director made the contact with the stakeholders and then passed the agreed project to the project manager to manage the project. The project manager will communicate between the project team and stakeholders throughout the project cycle. This is to ensure the project is delivered according to the business requirements. The respondent explained:

> *"The communication and project team spirit are very important. The project manager must understand your team as well as their capabilities and experiences are very important too. Project meeting once a week or every day is crucial depend on its project such as Software development team will meet every week whereas hardware team will meet every day due staff need to update task once the installation starts to minimise any mistake. Mistake occur mean time costly thus costing increase." (Interviewee 8)*

4.4.3.3.4 Company MY 2

Company MY 2 had a different approach to that of Company MY 1. The respondent stated that:

> *"Depend on criticality, the complexity of the project and a lot of things. As a director in the company, I am not just looking at delivering projects. I have to look at the whole picture that includes the professional development of each individual staff. When I am doing the project as project manager, then my focus will be on the project, I will definitely pull the best guy to do the project." (Interviewee 11)*

4.4.3.4 Performance

Each project aims to achieve the agreed outcomes while risks and quality to the organisation have to be managed too.

4.4.3.4.1 Company NZ 1

The respondent from Company NZ 1 explained that any organisation needs their system to run well whenever they need it. The organisation needs to plan, develop a project and operate the project. In order to plan, develop and operate a project,

the organisation needs people working on it to have the relevant skills and capability to develop the system. The respondent explained,

> *"A meeting at the executive level of our customer will take place for having evidences of the contractual commitment, a documentation of our understanding of their business requirement, how to support them such as the service level, financial management and all of those governance process components are covered. I will facilitate it depending on what we covered. Various people will bring the artefact to the new tools."(Interviewee 1)*

The choice of people who will be working on the projects depended on project size and the requirement of the project. People who worked in the organisation were:

> *"We have department manager, service delivery manager, window engineer, network guy, ADM, storage people. It is all depending on the size of the project. We normally take one from each team." (Interviewee 4)*

There is a certain hierarchy in the organisation. There is board level, steering level, executive level, management level and operational level. Projects usually managed at the level between management and operational level. A project proposal is normally consulted and approved by the executive level, then one person from the management and operation level are assigned to work on the project. The respondent from Company NZ 1 explained that the senior management person will put together a report and present an update, information and project status to the executive level, steering level as well as a board level. In order to maintain its reputation, the organisation must work within the agreed timeframe and follow every step to comply with the project commitment. The project needs to be monitored closely and tight at the governance level to make sure the project is transferred on time and to prevent heavy penalties to the vendor. The respondent made the following comments:

> *"In respect of at the different levels like the board level, executive level, steering level and project level, I kind of sit on the side to all of that to feed my communications layer in project status, updates, etc. … It is a kind of project you can't move the schedule due to the financial implications are too high. … Because if you change the*

original plan, there will be a large penalty to the vendor and it will be very costly. Beside it will not give any good reputation to your organisation. … From a quality perspective, I am working very closely on these types of complicated projects so that we can meet the original agreed deadline and developments." (Interviewee 1)

In order to make sure the project succeeds, the project manager must understand the project and assign the right people to work on it. The respondent explained that most of the project managers in this organisation are PRINCE 2 qualified:

"PRINCE 2 is very good tool especially for someone that is new to start out with project management. Prince2 has an introductory course that gives you a very good background on Project Management. It teaches you things that you never really thoughts about and a lot of different things from start out to initiation, execution and the closure." (Interviewee 4)

Hence, the respondent further explained that this tool is making the job easier since people can refer to the same governance methodology and understand the governance related terminology.

4.4.3.4.2 Company NZ 2

The respondent explained that staff discovered the usefulness of the tracking management system for keeping records of the projects:

"With the time tracking management, it is certainly helpful and useful tool to have when running a project. This system provides information to keep track of the project as well as a record of how many hours have been spent on each project. With this system, we can get provide a close estimate of hours to be contributed in the new project." (Interviewee 7)

4.4.3.4.3 Company MY 1

The respondent from Company MY 1 described governance tools and methodologies and believed that PRINCE 2 was a useful methodology for running the project. The respondent stressed that their projects are not very large and have short timeframes:

"We use the guideline basically we do follow roughly the PMI guideline. And we do not have specific methodology that is adopted inside the organisation for all projects." (Interviewee 7)

Besides, there is a cost involved to train and certify people for frameworks such as PRINCE 2. Usually, small size organisations do not see the need for their people to obtain these certifications due to the relatively small scale projects. However, the respondent believed that even for large organisations like themselves there is no need to waste time and money on certifications like PRINCE 2 and explained:

"It is a waste of time to go through these kinds of training. … I see many projects follow these methodologies and processes tend to turn into custard. I don't see the point of having such methodologies and processes in our project." (Interviewee 9)

4.4.3.4.4 Company MY 2

The respondents from Company MY 2 explained that there were no adequate resources or enough staff working in the department. This was due to budget constraints in the organisation. The programming skills of the team in the department were also limited:

"Under development level, the tools that are available in this company are different and limited. We have to work individually, independently with our own expertise or skills." (Interviewee 12)

The respondent also explained:

"I have to do this project alone. My director decided that I will work alone on this project. This is because the other two programmers do not have the skill to develop this project" (Interviewee 12)

Addressing the requirements for delivering this project requires time. The respondent stated that the time given to work on the project was not adequate but the respondent worked overtime and completed the project as instructed. The respondent explained,

"My director requested me to complete this project within a month. Therefore, I have to work overtime and workload was heavy to meet the project timeline. I did complete this project on time. There is no budget allocated for this project since we have the resource and the development tools and database." (Interviewee 12)

4.4.3.5 Conformance

Each project conforms to external regulations and internal policies.

4.4.3.5.1 Company NZ 1

A discussion on regulations and policies adoptions for managing the project was expected. The respondent explained that communicating to the stakeholders about the organisation regulations and policy was good as it made the stakeholders aware of that the organisation followed policies and regulations rather than just consider on human decisions:

> *"Unless I have got business policy, my best decision may not be best practiced. For another thing is for how do they want us to do it. I will negotiate how to do and sometime is how we best do it so best practice." (Interviewee 1)*

4.4.3.5.2 Company NZ 2

There was not much discussion on how they adopted the external regulations and followed internal policies when managing projects. However, the respondents from Company NZ 2 indicated that they ensured the regulations and policies of the organisation were structured and followed accordingly for better project decision making and implementation improvement.

4.4.3.5.3 Company MY 1

Similarly, there was not much discussion with the respondents from this company on regulations and policies adoptions for managing projects. However, the respondents indicated that the team ensured projects were implemented according to the project contract agreement and requirements therefore the project was managed based on regulations and policies.

4.4.3.5.4 Company MY 2

Similarly to Company MY 1, the discussion on regulation and policies was very brief. However, the respondents from Company MY 2 pointed out that the ICT team tried to follow what the organisation required but there were regulations and policies to follow. The organisation did not have structure regulations or policies to follow. Even if there were, a lot of these regulations and policies would be only verbally mentioned and not documented.

4.4.3.6 Human Behaviours

The respondents were asked if project managers were motivated and committed to deliver the project.

4.4.3.6.1 Company NZ 1

The respondents from Company NZ 1 expected their organisation to be well structured, committed to the project and motivated by the project manager and made the following comments:

> *"Open communication both internally and externally where there is no hidden information so that both customer and project manager are consulted, informed and agreed on the same terminology" (Interviewee 4)*

Another respondent from Company NZ 1 agreed that it is important that project manager get together with customers, to make sure the project developed support the requirement of the organisation goal:

> *"Often we work the quotation with the customers. This is to make sure we understand the scope in the group that work with them is documented as part of this segment of the work where it essentially becoming the contract between us and the customer about what we are going to deliver" (Interviewee 2)*

Project teams were motivated to deliver the project accordingly as the respondent from Company NZ 1 commented:

> *"All teams are very dedicated at doing and delivering the best outcome for the customers. Everyone is very professional about what they are doing and they know what to do with their tasks. One of the key things that I believe for successful project is getting them involved in the proposal stage. (Interviewee 4)*

In addition, stakeholders and project teams must be upfront with each other. Stakeholders and project teams must raise issues as they are recognised. The respondent from Company NZ 1 commented:

> *"The main key to a successful project is to be open communication internally as well as externally. I believe being open and honest about things." (Interviewee 4)*

Without being upfront with each other, a trust issue can occur. It is important that stakeholders trust the project team to deliver the project:

> *"Because I am a customer facing, obviously relationship building is very important. I have to make sure people to trust me for transiting their office into our support." (Interviewee 1)*

Also, the respondent believes that by building up this relationship will gain trust from their stakeholders. It is also important to gain trust from the personnel internally:

> *"At the same time those people internally that been doing the work are equally important to me to trust me." (Interviewee 1)*

4.4.3.6.2 Company NZ 2

The respondent from Company NZ 2 stated that the project needs to be driven by someone who wants to take charge of the project, who is motivated to run the project and committed to project success:

> *"A person who is a champion really in charge driving the project forward. This champion will do a lot of communication between colleagues. " (Interviewee 6)*

The respondent stated that the team worked under a lot of pressure such as when multiple project deadlines were close together. This is the advantage when the organisation earns the trust of the stakeholders. The point is that a stakeholder can trust the team to deliver the project with confidence. When there is trust, the organisation will have on-going business and is able to negotiate with stakeholders the project timeframe, as explained:

> *"It's taken a fair bit of guts to say to a client that we can start the project but not this month until October and actually have they accepted that. I think once you get to the trusting point especially you have the on-going business. You can say to them because we have two years of track records. Then you will have a new project coming next month." (Interviewee 6)*

4.4.3.6.3 Company MY 1

The respondent from Company MY 1 has a different view on staff motivation. The respondent explained that the ICT department focuses on the ICT

infrastructure not staff training to up skill their knowledge. It was unnecessary and she made the following comments:

> *"We don't believe in sending staff to do training. The company believes they can read material to enhance their own knowledge. The company do not support providing training." (Interviewee 7)*

The mentality of this organisation was that had staff to work on what they promised to develop and self-development was not considered important for the organisation.

4.4.3.6.4 Company MY 2

The respondent stated that the organisational culture is different. People who had with knowledge would work on the project. This means there was an uneven workload among staff. The respondent gave an example of how the staff were selected to work on a project:

> *"If they need to do a project with open source – PHP. Instead of working as a team, the person who has the knowledge of PHP will work on it. Software is costing, development tools costing too." (Interviewee 12)*

The respondent also stated that there was no teamwork in the organisation. Even when they worked in a team learning programming with each other was difficult. This was due to the language barrier between team members. Although there is no barrier communicating with the director as explained by the respondent:

> *"Speak in English with my director but the others speak in their own language. There is not much communication between me and the team barely communicating with each other unless we must." (Interviewee 12)*

4.4.3.7 Factors Influencing People Mechanism

This section describes the factors influencing the people mechanism that were found in the field research and they are presented in Table 4.8. The tick "√" in the table indicates the organisation for which a factor was identified. The factors are an extraction from the NVivo software where there were nodes. These factors are discussed in subsections 4.4.3.7.1 - 4.4.3.7.8.

Table 4.8: Factors influencing the people mechanism

Factors identified	Company NZ 1	Company NZ 2	Company MY 1	Company MY 2
Lack of communication				√
Effective communication & responsiveness	√	√	√	√
Lack of Leadership		√	√	
Lack of staff			√	√
Lack of teamwork				√
Inadequately trained ICT staff			√	√
Lack of staff engagement				√
Create business value	√	√	√	√

4.4.3.7.1 Lack of communication

The respondents from Company MY 2 indicated there were communication barriers in the department as well as at the top management level. The communication barrier within the department was due to a language barrier where staff minimised their communication as little as possible to avoid misunderstanding:

> *"Speak in English with my director but the others speak in their own language. There is not much communication between me and the team." (Interviewee 12)*

The communication between directors does not appear to be very good. The respondent stated that the top management was not made clear statements and the respondent being on the receiving end, had to mind read or guess as to what is being requested of them, as explained:

> *"It creates a lot of frustration for me. So at the end, either I just let the department be independent or live with the stress and drama." (Interviewee 11)*

On the other hand, it seems to be in human nature that people are great at saying what they do not want or what they do not want others to do. The respondent stated that communication might become better if the communication style was improved to focus on desired, positive behaviours and results, as explained:

"Instead of raising our voice in the meeting, with an appropriate tone can avoid any damaging style of communication, to improve the communication style or working relationship. (Interviewee 10)

4.4.3.7.2 Effective communication & responsiveness

Although a communication barrier was mentioned in Section 4.4.3.7.1, the respondent from Company NZ 1 stated that effective communication would ensure that everyone understands on the same level and agrees to the same. The respondent said:

"The main key to a successful project is to be open communication internally and externally. I believe being open and honest about things." (Interviewee 4)

Another respondent from the same company added:

"We need a key representative to make this communication." (Interviewees 2)

The respondent from Company MY 1 also supported that:

"The communication and project team spirit are very important." Interviewee 8)

This is also confirmed by the respondent from Company NZ 2:

"What make project works – I think communications more than properly anything." (Interviewee 5)

4.4.3.7.3 Lack of leadership

As mentioned in section 4.4.1.7.2, a low level of leadership can be ruining staff morale, staff motivation as well as workplace trust. The respondent from Company NZ 2 stated that a leader's communication style can directly disrupt and undermine the building of much needed trusting relationships that get results and enhance staff morale and motivation. The respondent explained,

"The number one thing makes project work is a champion. A person who can in charge of driving the project forward."(Interviewee 6)

4.4.3.7.4 Lack of staff

The respondents from Company MY 1 reported that they do not have enough staff available to work on projects. The respondent indicated that there isn't any selection when assigning staff to work on the new project:

"Not so much of a selection. I don't have a lot of choices of selecting staff. I only have a hand full of engineers and these are the people that must go." (Interviewee 7)

The respondents from Company MY 2 also discussed the lack of staff:

"I have to do this project alone not in ICT team. This is due the other person does not have the skill to develop this project. Therefore, I have to work overtime and workload was heavy to meet the project timeline."(Interviewee 12)

4.4.3.7.5 Lack of teamwork

The respondent from Company MY 2 does not see that teamwork exists in the organisation. One of the reasons seems to be that staff have their own specific skills for program development or using tools:

"*Between 3 programmers and the development tools available in this department, I am an expert with one particular kind of development tool and vice versa for the other two senior programmers. Therefore, we work separately as an individual. Here is no teamwork." (Interviewee 12)*

The respondent further explained when they worked as a team:

"We only work together when we need to analyse data, meet together, meet with clients, and decision making. Then the project will be assigned to whoever has the expertise." (Interviewee 12)

4.4.3.7.6 Inadequately trained ICT staff

The respondent from Company MY 1 stated that staff training is unnecessary because it can increase costs in the organisation as well as they believe that staff should be self-learning and self-educating to enhance their skills:

"The current company does not support or to spend money on new tools, because they believe that not only to buy the tools, the company also needs to spend money to train their staff to use the new tools." (Interviewee 8)

Another respondent from Company MY 1 also confirmed:

"We don't believe send staff to do training in PRINCE2 to earn value. The company believes they can read their own and use it to

prepare themselves to understand better the project fundamental." (Interviewee 7)

4.4.3.7.7 Lack of staff engagement

The respondent from Company MY 2 stated that team work was only required when necessary and made the following comments:

"We do work together on analysis, understanding, write proposal and budgeting. However, under development level, the tools that are available in this company are different. We have to work individually, working independently with our own expertise or skills." (Interviewee 12)

Due to language barrier, staff from Company MY 2 was not communicating with each other which led to little staff engagement. Even if the respondent would like to engage with the team but does not mean the other members are willing to open interact with each other. The respondent explained:

"There is no team work here. We don't know how to engage with each other even if I pretty much would like this to happen. But it is impossible. May be it's our language and culture barrier. We just do our own development." (Interviewee 12)

4.4.3.7.8 Create business value

The majority of the respondents in NZ stated that active top management involvement in the governance of projects from the beginning of the project cycle to the realisation of benefits would create business value:

"It is effective to have governance to help me with my work. It makes my job a lot easier when I have governance guideline because you have all of those multiple streams, so you have got the service desk component, the database, the network, the backup, you have all these ICT processes you can possibly find: procurement, financial management, asset management all of these thing have separate procedures and they're streaming their own." (Interviewee 1)

The respondent from Company NZ 2 also agreed:

"Governance definitely gives me peace of mind." (Interviewee 6)

A similar response was given by the respondent from Company NZ1:

"Yeah – I will bring Project governance to the company if suitable. I am happy to use project governance if it is really benefiting the project team. I also believe our work, our job scope, our task will be structured accordingly." (Interviewee 8)

The respondent from Company MY 2 also agreed and added:

"Yes I think it will if we have the right person managing the projects." (Interviewee 10)

The respondents from Company MY 2 believed that project governance adoption could create value to the business but it would depend on certain matters:

"Yes definitely will but depending who manages the projects." (Interviewee 11)

4.4.4 Summary of All Factors

Table 4.9 summarises the factors that influence PG and that were identified in the research study of four companies in two different countries.

Table 4.9: Summary of Factors

PG Implementation	**Mechanisms**	**Factors that influence PG in two ways:**	
		Negative way	**Positive way**
Based on the AS8016 standards: 6 Principles 1. Responsibility 2. Strategy 3. Investment 4. Performance 5. Conformance 6. Human Behaviour	**Structures** (Van Grembergen & De Haes 2009)	• Lack of organisational leadership • Lack of respectful rebuttals • Budget Planning issues • Low utilisation of governance adoption because of time consuming	• Treat each other with respect • Organisation to be more strategic
	Processes (Van Grembergen & De Haes 2009)	• Lack of commitment from top management • Scope creep • Lack of funding • Lack of documentation • Lack of information • Overkill project	• Managers to take project improvement seriously • Checklist • Encourage PG adoption

		budget • Lack of risk management	
	People (Toomey, 2009)	• Lack of communication • Lack of Leadership • Lack of staff • Lack of teamwork • Inadequate trained ICT staff • Lack of staff engagement	• Effective communication • Create business value

These factors have been categorised according the three mechanisms in PG implementation and could influence PG either in a positive or in a negative way.

4.4 SUMMARY

This chapter reports the field work findings based on the data collection methods that were defined in Chapter 3. The field work was done by conducting unstructured interviews in four organisations. Issues and challenges faced by the researcher were reported. These were: the process for getting approval to obtain the secondary data was not available for this study due to sensitive information and confidentiality; difficulty to gain access to the research field overseas; interviews arrangements and availability of interviewees; the research ethics application approval process; the research was limited by time constraints.

The recorded interviews were transcribed and fed into NVivo 9. Nodes were structured to reflect the patterns and themes. Data were coded using a thematic approach to define common themes. The mechanisms and factors from the AS 8016 PG framework were identified in the research study and reported. The findings were documented and summarised in Table 4.9 in section 4.4.4.

Chapter 5 discusses the findings in relation to the literature reviewed in Chapter 2. The limitations of the research and the contribution it makes are also presented.

Chapter 5

DISCUSSION OF FINDINGS

5.0 INTRODUCTION

Chapter 4 reported the findings of the research study conducted in four organisations in two different countries. Chapter 5 is structured to answer the research question, and to compare, contrast and discuss the findings. The answer to the research sub-questions will be discussed in Subsection 5.1.1 followed by the answer to the main research question in subsection 5.1.2. Section 5.2 presents the cross analysis of how top management governs ICT projects (in subsection 5.2.1), the factors that influence PG (in subsection 5.2.2) and the importance of top management and PG (in subsection 5.2.3). Section 5.3 concludes the chapter.

5.1 DISCUSSION OF RESEARCH QUESTIONS

After the data collected and analysed, the research findings discovered that the information had gathered from the interviews turned out to become prescriptive rather than descriptive way. The research question and sub-questions were formulated in Chapter 2. The research question was used to guide the research field study and the collection of data. The research question as outlined in Chapter 2 is

What can top management do in order to improve the PG?

To answer the main research question, the following sub-questions were formulated to further help the researcher during the study:

1. *How does the top management govern ICT projects?*
2. *What are the factors that could lead to effective PG?*
3. *How important is for the successful project completion that the top management adopt PG framework?*

In this section, the research question will be answered by extracting the evidence from the findings presented in Chapter 4.

5.1.1 Answers to Sub-Questions

As stated in Section 2.7, a total of three sub-research questions were derived in order to support answering the main research question. Table 5.1, Table 5.2 and Table 5.3 present one sub-question each and the evidence that is used to answer that sub-questions. The answers are supported by evidence from the findings presented in Chapter 4. The answers to the question are defined as "strong support", "some support", "no support" or "insufficient evidence".

Table 5.1: Research Sub-Question 1

Sub Question	**How does the top management govern ICT projects?**
Answer	Strong support. The majority of interviewed respondents and stated that top management should govern ICT projects.
Evidence to Support the Answer	As discussed in subsection 4.4.2.7.2, the commitment from top management is important for the support of the organisation decision making, managers have to take project improvement seriously. In order for managers take project improved seriously, they adopt some form of PG where respondents believed that PG provides guidelines for managers to manage the project as well as for top management to have guidelines in place to govern projects as indicated in subsection 4.4.2.7.11. In terms of commitment, engagement from top management must be considered as indicated in subsection 4.4.2.7.1. Due to no recorded documentation, there was no record of goals, requirements, and actions for staff to comply with in the workplace. There were no clear policies or procedures for staff to comply with as mentioned in subsection 4.4.7.5 and information was lost as discussed in subsection 4.4.7.6. The top management documenting any decisions made is crucial for any project team as the team needed these decisions to develop a system according to the business requirements as mentioned in subsection 4.4.2.7.7. At the same time, a checklist is recommended by respondents for quality control. As discussed in subsection 4.4.2.7.10, a checklist is used to capture any arising issues earlier and resolve it as soon as possible. It

	also reduced any further issues arising in the project at later stages. All in all, for top management to govern ICT projects they must have effective communication channels as mentioned in subsection 4.4.3.7.2.

Table 5.2: Research Sub-Question 2

Sub Question	**What are the factors that could lead to effective PG?**
Answer	Strong support. The majority of the respondents interviewed in the research study indicated some factors that could enhance PG.
Evidence to Support the Answer	In terms of the structure mechanism where decisions are made in the organisation the respondents recommended for the organisation to be more strategic as mentioned in subsection 4.4.1.7.5. This factor was specifically addressed by Company MY 2 and supported by the other interviewed companies. Records management is also recommended by the respondents as (subsection 4.4.2.7.7). Records management registers details that have been documented from the meetings, discussions or in digital format. It is important that any decisions made or agreed for the ICT projects are documented. The checklist is another factor that was found in the interview analysis. Company NZ 1 has used checklists for project tracking and improvement as mentioned in 4.4.2.7.10. Company NZ 1 suggests practising this checklist exercise in every project. This would keep control of the project and keep it from running into high risk situations (refer to subsection 4.4.2.7.9), minimise scope creep (discussed in subsection 4.4.2.7.3) or information missing or not documented (discussed in subsection 4.4.2.7.5 and in subsection 4.4.2.7.6). Another factor is mentioned in subsection 4.4.2.7.11 as respondents suggested organisations adopt a suitable PG framework for top management to use in order to give support and guidelines to project managers and operational managers who manage ICT projects.

	Effective communication is highly recommended as indicated in subsection 4.4.3.7.2. Based on findings about the lack of communication that was discussed in subsection 4.4.3.7.1, respondents strongly suggested that communication between departments as well as with top management must be clear, informative and responsive. All of the above factors require management to take the project seriously as discussed in subsection 4.4.1.7.6. Without commitment from project managers to the project, there is no staff motivation, no leader to lead or to run the projects. This means lack of staff and lack of teamwork and hence it creates no value or negative value to the organisation. Therefore, the factors described in this section can possibly enhance effective PG and create business value as mentioned in subsection 4.4.3.7.7 and discussed in section 2.6 (Van Grembergen & De Haes, 2009; SAA, 2010; Weill & Ross, 2009).

Table 5.3: Research Sub-Question 3

Sub Question	**How important is for the successful project completion that the top management adopt PG framework?**
Answer	Some support. The majority of the respondents supported and suggested the importance of top management adopting PG. However, some respondents suggested and pinpointed several other factors to consider (i.e. Organisational structures, strategies, etc.) before looking into PG adoption.
Evidence to Support the Answer	***For*** Company NZ 1 indicated that adoption of a suitable PG for project implementations is required. As mentioned in subsection 4.4.1.4.1, staff in the organisation are well trained with PMI or PRINCE2. These tools provide guidelines on how to establish the governance structure for running the project. Besides, the respondent from Company NZ 1 stated that an organisation must be well structured first in order to receive and deliver projects. PG is in place for the team to follow the guidelines as indicated in subsection 4.4.2.1.1, subsections 4.4.2.2.1, 4.4.2.7.3 and 4.4.1.7.7.

	Similar to Company NZ 1, Company NZ 2 also suggested (subsection 4.4.1.4.2) that it is important to adopt a suitable PG that fit the project and the organisation. However, the respondents from Company NZ 2 believed that due to the project size in the organisation, it is not necessary to adopt PG. This is because the size of the organisation is small and only a handful of staff are working on projects. Staff wear different hats to work on projects. The respondent indicated that PG is more constructive for a bigger project in a large organisation as mentioned in subsection 4.4.1.4.2. As indicated in subsection 4.4.2.7.11 both companies encourage top management to adopt PG that is suitable to use for governing ICT projects as well as easy for managers to follow the guidelines when managing ICT projects. ***Against*** As mentioned in subsection 4.4.2.7.11, Company MY 2 believes that top management adoption of PG is not necessary in their organisation. This is due to issues presented in tables 4.5, 4.6 and 4.7. As mentioned in subsection 4.4.1.2.4, there is no business – ICT alignment found in the organisation. Working on an orderly organisation structure is suggested before thinking about adopting any governance. The respondent from Company MY 1 also believes that not every project can follow governance. Furthermore, the respondent from Company MY 1 stated that the amount of paperwork involved in PG is massive. This requires time from staff to keep track of the documents for audit purposes. As mentioned in subsection 4.4.2.7.11, the respondent does not support adopting any form of governance methodologies based on the experience the respondent has had in the past where many projects failed as every project manager tried to complete all the paperwork and was not focused on the project progresses. The respondent does not see the value to the organisation to invest into PG.

5.1.2 Answers To Main Research Question

Table 5.4 presents the main research question, its answer and the summary of evidence.

Table 5.4: Main Research Question 4

Main Question	**What can top management do in order to improve the PG?** The aim of the study is to use six key principles to guide this study. There are responsibility, strategy, investment, performance, conformance and human behaviour.
Answer	Support. The majority of respondents suggested a list of factors indicated in subsections 4.4.1.7, 4.4.2.7 and 4.4.3.7.
Statements by Companies	
Company NZ 1	***For*** *Adopting a suitable PG model* (discussed in subsection 4.4.2.7.11) to provide guidelines for managers to follow as well as to ensure their steps are done correctly in order to prevent a project from descending into chaos. It is necessary for top management to understand their *responsibility* (discussed in subsections 4.4.2.6.1 & 4.4.3.6.1) for realisation of value from projects involving investment in ICT. The *business & ICT strategic alignment* is needed to optimise the value that ICT contributes to the organisations. This ensures that a shared understanding of how ICT applications, technologies and services will contribute to business objectives. As indicated in subsections 4.4.1.2.1, 4.4.2.2.1 and 4.4.3.2.1, a trusting working relationship between the ICT project units and the rest of the business group in the organisation is demonstrated by reliable daily operations, manage problems and minimise issue and innovative solution delivery. Hence, the administration will have clear expectations of how ICT will contribute to achieving the company's business goals and objectives. In addition, *effective communication* (indicated in subsection 4.4.3.1.1) both internally and externally is a step forward to project success. The Project team needs is to communicate openly and

	upfront with each other if any issue occurs in the project such as lack of information or scope creep, this is addressed in subsections (4.4.2.7.6 and 4.4.2.7.3). It is important to appoint a person who is able to build their relationship between clients and the project team and to make sure these people trust the project will be completed according to the business requirements (discussed in subsection 4.4.3.6.1). Apart from communication support, project checklist is practised in projects regularly throughout the whole project cycle (discussed in subsection 4.4.2.7.10). This checklist helps to track down project issues earlier and to keep track on project progression. ***Against*** As indicated in subsections 4.4.3.6.1 and 4.4.3.7.1, *hiding information* create lack of trust and frustration, and could lead to a project failing.
Company NZ 2	***For*** It is important to appoint a person as a *champion* for the project (discussed in subsection 4.4.2.6.2) who is enthusiastic, feels inspired to work on the project and drives the project forward until completion. Knowing how to communicate well with every person involved in the project is essential (discussed in 4.4.2.7.2). Similar to the checklist (discussed in 4.4.2.7.10), a tracking system adoption for project time tracking, project progression and people management will help the top management to monitor and measure how well the project is proceeding, lessons can also be learned from the events documented in the tracking system for future project development improvement (indicated in 4.4.3.4.2 and 4.4.2.4.2). ***Against*** If PG is adopted, it is suggested not to follow the guidelines too strictly. As indicated in subsection 4.4.3.2.2, the guidelines should be

	altered to a suitable and appropriate level to match the project requirements.
Company MY 1	***For*** Based on the discussion in subsection 4.4.1.7.8, providing a *training* opportunity for staff enhances skills development and benefits the organisation. Top management to have *good communication* and *team spirit* is important to project success as indicated in subsection 4.4.3.7.2. ***Against*** If PG is adopted, it is suggested not to do all the *paperwork* such as photocopying or putting reports in the last minute as indicated in subsection 4.4.2.7.11.
Company MY 2	***For*** Prior to top management adoption of PG to govern ICT projects, the respondents suggested getting *the organisation structure* sorted. Top management must make sure the *business & ICT strategic alignment* is in place. This includes the *capability of making decisions* on what, how and when to adopt as well as to understand how to use PG as suggested in subsection 4.4.2.7.11. A yearly *budget* allocated to the ICT department would be essential. The ICT department can plan what needs upgrading and phase out old equipment. This would minimise the issue of funding (discussed in subsection 4.4.2.7.4) and unforeseen expenditure (discussed in subsection 4.4.2.2.4). An *effective communication* as well as *responsive*ness would help minimise issues with missing information or information not documented as mentioned in 4.4.1.7.2 and suggested in subsection 4.4.3.7.2. To avoid issues with information not being recorded (discussed in subsection 4.4.2.7.5) or decisions not being documented (discussed in subsection 4.4.2.7.6), *records management* is suggested. This includes documenting any decision points in relation to the project. In the early part of the project, the key

	milestones should be decisive and need to be signed off before moving on as discussed in subsection 4.4.2.7.7. Top management commitment is known to have a positive influence on project success. Hence, the *commitment from top management* is important, providing that *staff is engaged* with the implementation of the project. With the combination of top management commitment, defined organisational structure, strategic alignment, budget allocation, staff engagement, appropriate documentation as well as effective communication, the project could be completed successfully. ***Against*** Top management must have effective communication every time to *reduce confusion* (discussed in subsection 4.4.1.7.2) and *avoid the need for mind reading* (discussed in subsection 4.4.1.7.1). Raising voice does not get messages across (discussed in subsection 4.4.1.7.3). The only way to communicate a message is to listen and treat each other with respect. Without a clear organisational structure, budget control, Business – ICT strategic alignment, there will be no governance adoption.

Table 4.6 summarises the factors. The tick "√" in the table indicates the organisation for which a factor was identified. The factors are an extraction from the NVivo software where there were nodes. These factors are discussed in subsections 4.4.1.7.1 - 4.4.1.7.6.

5.2 DISCUSSION OF FINDINGS

This section presents four cross-case analysis from the findings found in the studies. Subsection 5.2.1 discusses how top management governs an ICT project. Subsection 5.2.2 presents the factors that enhance effective PG, while the importance of top management adopting PG is discussed in 5.2.3. Subsection 5.2.4 will discuss what can top management do for PG adoption.

5.2.1 Cross-case analysis about what can top management do to improve PG

Based on this cross case analysis, the study has confirmed that governance for ICT projects must be applied. Top management are usually the people who initiate the project, are responsible for the funds invested in the project and ultimately determine the business benefits that will be obtained through the project. Projects are part of the larger organisational environment, and many factors that might affect a project are out of the project manager's control. *Top management commitment* is crucial. If project managers have the top management commitment, they will also have adequate resources and will be able to focus on completing their specific projects. The necessity of top management commitment must be considered seriously. Top management must be committed to providing support to the project decision making (as referred to 4.4.2.7.2). Top management can provide guidance for project managers to run the project with confidence and to take projects development seriously. As discussed in subsection 2.4.4.1 it is essential that a project board (which is referring to top management), owns the project to complete their project successfully. Weill and Ross (2004) indicated that senior management (which also refer to top management), clarifying priorities and demonstrating commitment usually get a lot of attention in the organisation as discussed in subsection 2.5.3.

Apart from commitment, *top management engagement* must be also present. Often, project managers are expected to commit as well as engage in the project to completion. The researcher believes that top management should be expected to do the same. Without top management commitment and engagement, the project team does not have a strong foundation to stand on and complete the project.

In order to keep top management engaged in the project, the first step is making sure that top management are provided with the latest project status. Project managers are responsible for making sure that project team members follow through on the commitments to keep top management updated. In order to keep the project on-track, the researcher suggests that engagement from top management is also critical to the project success. The researcher believes that the project manager will need a strategy to keep top management engaged if they are becoming distracted.

Without top management commitment and engagement, many projects will fail as discussed in section 2.2 (Muller, 2009; PMI, 2002). In subsection 4.4.2.7.2, the respondents suggested that projects should have *a champion* who acts as a key advocate for the project. A champion would be a person with leadership skills and who is confident and motivated to steer the project forward towards achieving the agreed outcomes. The champion must have *effective communication* with project teams, top management as well as with the clients in order to have an effective PG. As discussed in subsection 4.4.3.7.2, the respondent indicated that the key to project success is to have open communication internally and externally. As pointed out in subsection 2.5.3, the first critical step in developing and delivering effective PG and communication is identifying, classifying, and understanding the various stakeholders, their specific role in governance, their information needs, and their ability to influence and affect outcomes.

Apart from effective communication, *responsiveness* is absolutely critical for creating better relationships, trust, and rapport between stakeholders and the personnel involved in projects. A good example about having effective communication and responsiveness is given by Company NZ 1 as mentioned in 4.4.1.1.1; they indicated that it is very important to keep their stakeholders involved and informed for making sure they understood and agreed on the same terminology.

5.2.2 Cross-case analysis of factors influencing PG

A summary of factors identified in the research study has been put together and presented in Tabled 4.9. The findings of business and ICT strategy was found in subsection 4.4.1.2.4 indicated that a company does not have strategy alignment, the ICT department faces endless issues with projects overspent, increased risk, and no ICT improvement in the organisation. Hence, an organisation with a good business – ICT strategic alignment would have policies and processes in place for a manager to use and to follow as mentioned in subsection 4.4.1.2.1. A similar suggestion found in subsection 2.1.2 where the strategic alignment of ICT with the business the business value is achieved. The roles and responsibilities have to be understood and followed by guidelines provided by PG framework. As mentioned in subsection 4.4.1.7.5, an organisation to be more strategic is strongly encouraged by Company MY 2 due to business – ICT strategic alignment cannot

be found in the current organisation. The information between top management and the upper level of executive members are not communicated openly and information is hidden in this organisation. As a result, change management in this organisation is needed.

When business – ICT strategy is aligned, project managers are aware that every project must contribute value. Any information relating to the projects must be recorded as it is designed to meet the future needs of their stakeholders.

Records management is often seen as an unnecessary or low priority administrative task that can be performed at the lowest levels within an organisation. This research study highlighted that project managers need to think that information is valuable to the organisation for the purpose of audits or for project improvement. As indicated in subsection 4.4.2.7.7, documenting any decisions made, agreed, said or completed project in digital format or in an old-fashion way is an important task for project teams and it is strongly recommended. This is because project records may become subject of discovery or audits. Audits are used to confirm decisions made by the project team or by other authorities. Records management has not been indicated in any framework discussed in Chapter 2. This is one new requirement that can be added to existing frameworks.

Records management allows top management to go back to records if needed. It can be used as a checklist where top management can refer back to these records and recommend project improvement. This is also one of the factors have been discussed in subsection 4.4.2.7.10 where it was recommended to run checklists regularly for every project to keep the project healthy and avoid running into high risk situations. Checklists identify any issues relating to the project such as scope creep (discussed in subsection 4.4.2.7.3) or information missing or not documented (indicated in subsections 4.4.2.7.5 and 4.4.2.7.6) at the early stage. With these issues identified, project managers are able to bring them to the attention to the project team. Running these checklists can be time consuming for the project managers at times. However, the checklist would enable the top management to discuss what is right about the project and point out what aspect has slipped and hand it over to the support team for any corrections of issues have been picked up by the help check. This provides the opportunity to top management and project managers and team to establish an open communication about issues that occurred during the project.

An effective communication between project teams, top management as well as with clients is an important factor in PG. This has been discussed in subsections 5.2.1 and 4.4.3.7.2. As discussed in section 2.5.3 in Chapter 2, the first critical step in developing and delivering effective PG and communication is identifying, classifying, and understanding the various stakeholders, their specific role in governance, their information needs, and their ability to influence and affect outcomes.

It all comes down to top management in taking project development and implementation seriously. As discussed in subsection 4.4.1.7.6, an active participation of top management in PG from initiation to realisation of benefits can enhance business value. Without an active involvement of top management in the governance of projects, this would be a project failure similar to the project of the Airbus 380 discussed in section 2.5.1.

Most of all, the roles and responsibilities of top management is to take project development seriously making sure PG is adopted so project outcomes are successfully achieved. Project managers need to adapt to the project guidelines and use them when managing the project. Project managers and project teams are better motivated to deliver the projects when there is PG. Projects will deliver outcomes according to the agreed business requirements. In doing so, successful projects will deliver business value for the organisation. Hence, the purpose of implementing a PG is to ensure that ICT meets with the organisation's strategies and objectives as referred in 2.6 to various authors such as Van Grembergen & De Haes (2009), SAA (2010), Weill and Ross (2009) as well as indicated in subsection 4.4.3.7.7.

5.2.3 Cross case analysis of the importance of top management adopting PG

The findings from this study show that the first key is top management must adopt a suitable PG for governing ICT projects. Similar proposition is discussed in section 2.2, namely that governance of ICT projects is facilitated by having experienced, well-trained senior project management and by the organisation having an established methodology for managing projects (Sherma, Stone & Ekinci, 2009). Professional certifications coach project managers how to use guidelines and practice them with their project team to deliver projects. These certifications are expensive but most large organisations are happy to sponsor the

staff to obtain them. Well-trained staff are able to enhance and practice their skills with confidence and knowledge as well as enrich the organisation changes if necessary. Also, stakeholders would be more confident that the organisation can deliver their projects.

A well-structured organisation is the second key to PG adoption. In this research study there was very little discussion on how top management should adopt PG but the adoption of a PG framework is highly recommended in subsection 4.4.2.7.11. Before top management embark on implementing PG, one suggestion (indicated in subsection 4.4.1.4.1) was to use the survey method for assessing the current practices on how they manage their projects, authorities' delegation and accountability, performance and status reporting and risk management. Often this survey would be completed by the customers. This survey would help top management to determine the areas of strength and weakness, as well as identify the performance improvement that they need to adopt to rectify those weaknesses so they can have an effective PG framework. This survey will give the organisation an objective assessment of the opportunities as well as the threats that they would eventually encounter if they do not do anything about the project management performance improvements that they need to undertake.

The third key to PG adoption is to improve the alignment between the business strategy and ICT strategy. To form a steering committee that consists of the ICT directors, financial officers and other members of the board of directors to focus on developing and reviewing ICT strategy and making sure it is supporting the organisation's business objectives. The importance of the core purpose of PG lies with the alignment of ICT strategies with the strategies of the organisation through implementing the appropriate components and there are structures, processes and people in the organisation.

Due to issues that were addressed in subsections 4.4.1.7, 4.4.2.7 and 4.4.3.7, an organisation that does not have a business – ICT strategic alignment would not consider of adopting PG. An organisation must be clearly structured and the top management first need to sort out their roles and responsibilities in order to get involved in decision making as discussed in subsection 4.4.1.2.4. Even when PG is adopted, top management needs to carefully place the governance around the project. They have to decide what parts of PG fit the project, how they apply and use them in an appropriate manner to ensure project

managers and project team are following the guideline to deliver projects as suggested in subsection 4.4.2.7.11.

5.2.4 Cross-case analysis of the top management "to do" list

There are many things top management can do when using a PG framework to govern ICT projects. This depends on the size and type of the organisation and on the organisational culture.

Six principles from AS 8016 PG framework (SAA, 2010) were adopted to drive the research analysis. Top management, project managers as well as project teams can influence these factors. Some of the factors influenced PG negatively but some others can enhance PG. Factors that are discussed in subsections 5.2.1, 5.2.2 and 5.2.4 are considered desirable behaviours and related to the six principles from the AS8016 PG framework (SAA, 2010). Among these factors are: making sure that there is alignment between business strategy and ICT strategy in the organisation, tracking system for time management, a leader or champion to work on the project, staff training and many others. In this research, five unique factors have been highlighted namely records management, commitment and engagement, budgets and checklists.

Records management is not indicated in any of the frameworks reviewed in Chapter 2. This research highlighted the importance of records management as discussed in subsection 4.4.2.7.7. Every project must be documented from the beginning to the end of the project cycle. This includes any changes made to the business requirements that must be documented and recorded. This is to prevent the project from running into chaos in the last stages of development. It is important to document any decisions made, agreed, said from the beginning of the project to the end of the project cycle. This is due to project records may become subject of discovery or audits.

Records management can be used as checklist where top management can refer back to these records and recommend project improvement. The recommendation of running checklists regularly in every project is to keep the project healthy and can prevent the project from running into high risk situations. The checklist can be identified as tracking management. One type of checklists can identify any issues relating to the project at an earlier stage. Project managers are aware of any issues earlier and can help project teams to improve the project

development. The Project team can use this checklist to resolve their issues as early as possible to reduce further complication as discussed in subsection 4.4.2.7.10. This checklist can also be used by the top management to keep track of the project management. On the other hand, running checklists regularly can be time-consuming for the project managers. However, top management is able to discuss project issues based on facts and point out what aspect has slipped and hand it over to the support team for any corrections. Another type of checklists would be a *tracking management system* which records time spent on projects, project's progress and people management. The issues documented in the tracking system can provide lessons to be learned for future project development improvement as indicated in subsections 4.4.3.4.2 and 4.4.2.4.2.

Apart from records management, top management must consider the funding needed for the ICT department. A yearly *budget* allocation to the ICT department would be ideal as it would enable the ICT department to plan for upgrading, or replacement of hardware and software as discussed in subsections 4.4.2.7.4 and 4.4.2.2.4.

These five factors are not identified or discussed in the literature reviewed in Chapter 2. These are factors that can become desirable behaviours within the six principles of AS8016 PG framework.

5.3 SUMMARY

This chapter has provided answers to the research questions formulated in Chapter 2, which is the main outcome of the research. Factors related PG framework identified in Chapter 2 and Chapter 4 have been compared and discussed. As a result, the factors found in the research study are: staff development, commitment and engagement, effective and comprehensive communication, responsiveness, records management, checklists, business and ICT strategy alignment, leadership, budget planning and no hidden information. Top management must take project development seriously by making sure suitable PG is adopted for project outcomes to be successfully achieved. Project managers need to adopt and use the project guidelines when managing the project. Project teams are expected to deliver the projects by following the guidelines provided by the organisation.

All information and decisions made by top management for the project or changes made by stakeholders must be documented and recorded for future project improvement. Well-trained staff can improve and practise their skills with confidence and knowledge. In addition, stakeholders can be more confident that the organisation is able to deliver their projects.

Top management commitment is known to have a positive influence on project success. Hence, *the commitment from top management* is important providing that *staff are engaged* in the project implementation. Also, top management, project managers, project team and any personnel related to the projects must have open and honest communication and treat each with respect. *Clear communication* both internally and externally is a step forward to project success and together with top management's *responsiveness* can help minimise these problems. These five factors, records management, budget, commitment and engagement and checklists, are highly important and must be included as desirable behaviours in the PG framework.

Chapter 6

CONCLUSION

6.0 INTRODUCTION

In the introduction of this thesis the main research question was identified as follows: *"What can the top management do in order to adopt the Project Governance (PG) framework to govern Information Technologies communication (ICT) projects"*. In the subsequent chapters the research has explored this issue using a qualitative study. Three mechanisms (structure, process and people) of PG implementation were examined to obtain an understanding of how top management conceptualises their PG role in relation to the AS/NZ8016 framework.

This chapter will present the implications of the research for top managers in section 6.1. The implications for practice will be discussed in section 6.2, and the limitations of the research are recognised in section 6.3. Finally topics for future research are outlined in section 6.4.

6.1 IMPLICATIONS FOR RESEARCH

This research contributes to the existing research on top management and their adoption of PG in four ways. First, this investigation focuses on how top management governs ICT projects while most of the prior work has focused on how ICT projects are managed. As mentioned in chapter 2, PG is about increasing the project's success rate. PG provides a scheme for directors and top management to exercise effective supervision and ensure their strategies are implemented as well as their benefits realised (Young, 2006). Organisation is to maintain good governance with a good project management.

Second, this research adds to the existing body of research in the area of PG adoption by examining various organisations' experiences from the beginning of the project to the end of the project cycle. Organisation needs governance to direct and control how the organisation deliver project (Toomey, 2009; Van Grembergen, 2008; SAA, 2010). Likewise, PG can be seen as knowing what type

of seed to use during what season, what soil to plant it in and how to maintain the plan in the long run.

Third, this research examines the inter-organisational connection between top management, project managers, project teams and clients. This requires communication to spread information about project decision and processes as well as about related desirable behaviours throughout the organisation (Weill and Ross, 2004). People in organisations interpret knowledge as a kind of power. As refer to Cress & Martin (2006) indicate that project teams share their knowledge between them openly and freely for enabling project completion. That is to have open communication at all levels. Information and knowledge are shared and communicated openly for effective project completion.

Fourth, this research identifies factors in chapter 4 that influence PG, inter-organisational collaboration, and inter-organisational learning individually and collectively in the context of the project implementation.

6.2 IMPLICATIONS FOR PRACTICE

An increasing challenge facing organisations once they have accepted complex ICT projects is how best to achieve the project delivery requirement in a reasonable period of time so that the benefits of the project implementation are realised. In order to accomplish this, the organisation must understand what type of governance framework should be utilised during the project implementation. The research has identified five unique factors.

First, the importance of records management has been noted in the research. The organisation must realise the importance of records management for quality control and assurance throughout the project development and implementation. Every project must be documented from the beginning to the end of the project cycle. This includes any changes made by the stakeholders to the project business requirement.

Second, top management must run checklists regularly. This will ensure that knowledge about the project status is made available to all concerned parties. Top management can take control of the project and prevent it from running into high risk problems. Ideally, a checklist can identify any issues relating to the project at an early stage. Project managers and teams would take this opportunity to resolve

issues at the early stage to reduce any further complications for the projects. On the other hand, top management can use the checklist for quality control and to ensure projects are run accordingly. Another type of checklist recommended is to track time spent on the project task. A Project manager is able to utilise such as checklist and allocate time to different phases of the project. Time spent on each phase will be recorded for their records management.

Third, budgeting is a common practice for every organisation and allocating funds to the ICT department involves costs for every organisation. Whether it is a small or large enterprise, a yearly budget allocation to an ICT department would allow them to plan what hardware and software needs upgrading or replacing.

Fourth, commitment and engagement (as fifth) from project managers and project teams are expected for project success in every organisation. The commitment and engagement from top management is also expected and should be practised in every organisation. In order to keep top management engaged in the project, feedback from project managers about progress is required. Project managers must make sure projects are on-track and project teams must make sure they follow through project commitments. The strategy to keep top management committed and engaged is what project managers need before top management become distracted. These five factors can be addressed through an effective and comprehensive communication in the organisation.

6.3 LIMITATIONS OF THE RESEARCH

All case studies have certain limitations. The selection of cases and participants may not be representative of any other organisation. There is also the possibility that the constructs and pattern matching in this study could be influenced by researcher bias. For instance, if the data had been coded by more than one researcher, this would have helped to overcome a possible bias.

The main limitation of the qualitative study approach is external validity. The organisations studied in this research may not be a representative sample of all organisations in which top management governs ICT projects. Only four organisations were studied, thus the results of this study are not universal across all ICT projects. The external validity limitation has been moderated through the use of multiple case studies and through a review of how the findings relate to

theory (Yin, 2003). Practitioners can apply the findings from this study to other similar cases. The findings may provide useful insights into how top management and how inter-organisational collaborations and inter-organisational learning can project improvement.

The limitations of internal validity mean that the PG adoption outcomes in each organisation may have been affected by other related factors. This was moderated by conducting cross-case search for patterns and themes.

Another limitation was the difference between the organisations in terms of their expertise in PG and in terms of their size. The model of PG adoptions varied between these organisations and this possibly provides new ideas and diversifies the findings, especially when conducting cross-case analysis of patterns and themes. The experience of the interviewees in PG processes was also a limitation to this research. The researcher had assumed that the participants would be highly skilled and experienced in PG.

Nevertheless, the time constraints influenced the collection of data. The collection of pre- and post- adoption research data would need to be approached months in advance in order to align the study with the implementation of projects. A period of at least two financial years would need to be considered in order, to accurately measure the benefits and the change of behaviours in the organisations. A better process to select case studies and ensure participation of top managers would have resulted in more robust findings.

The limitations discussed above do not indicate that this research or any of its findings are insignificant or invalid. The limitations are noted to recognise their existence and to highlight the need for further research.

6.4 FUTURE RESEARCH

These factors indicate that top management may require paying more attention to these factors found in the research study. This means top management to review these factors and analyse how these factors can be enhanced to improve the effectiveness of PG in their organisation.

There are considerable opportunities for future research to be undertaken as a result of the findings of this project. Further research can be conducted to explore factors such as the level requirements of top management commitment

and engagement may require to govern ICT projects. Another factor to research in the future is the organisational structure that should exist during the governance of an ICT project. The information and records management in project implementations can also be explored further in order to answer the following questions: How does top management run checklists to effectively govern projects and to achieve high quality outcomes while keeping with the PG best practice.

Further research on reviewing the case studies in this research can also be conducted to confirm the validity of the interpretations. The PG framework and the key concepts can be tested using other existing case studies or new cases with different types of projects to extend the findings.

The research study reported that some of the organisations had begun initiatives to address the level of PG in their organisation. Further research can also be conducted as a follow up study on these organisations to evaluate the current level of their PG and to determine if the improvements to their PG have had a positive impact on the ICT projects that have been implemented since the change of the project implementation.

6.5 SUMMARY

The AS8016 framework shows that PG can be implemented by considering three core mechanisms, namely structures, processes, and people. The research finds that both project team and top management should review the impact of the factors identified above. These five factors require an effective and comprehensive communication channel throughout the organisation.

Various limitations of the research are pointed out, such as external validity as the organisations studied in this research may not be a representative sample of all organisations where top management governs ICT projects and the results of this study are not universal across all ICT project implementations. The limitations discussed above do not indicate that this research or any of its findings are insignificant or invalid. The limitations are noted to highlight the need for further research. The research highlights the importance of top management and PG adoption for ICT projects success.

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Appendix A – Ethic Approval

MEMORANDUM

Auckland University of Technology Ethics Committee (AUTEC)

To: Brian Cusack
From: **Dr Rosemary Godbold** Executive Secretary, AUTEC
Date: 29 February 2012
Subject: Ethics Application Number 12/29 **A comparative case-study analysis on the effectiveness of project governance.**

Dear Brian

Thank you for providing written evidence as requested. I am pleased to advise that it satisfies the points raised by the Auckland University of Technology Ethics Committee (AUTEC) at their meeting on 13 February 2012 and I have approved your ethics application. This delegated approval is made in accordance with section 5.3.2.3 of AUTEC's *Applying for Ethics Approval: Guidelines and Procedures* and is subject to endorsement at AUTEC's meeting on 12 March 2012.

Your ethics application is approved for a period of three years until 28 February 2015.

I advise that as part of the ethics approval process, you are required to submit the following to AUTEC:

- A brief annual progress report using form EA2, which is available online through http://www.aut.ac.nz/research/research-ethics/ethics. When necessary this form may also be used to request an extension of the approval at least one month prior to its expiry on 28 February 2015;
- A brief report on the status of the project using form EA3, which is available online through http://www.aut.ac.nz/research/research-ethics/ethics. This report is to be submitted either when the approval expires on 28 February 2015 or on completion of the project, whichever comes sooner;

It is a condition of approval that AUTEC is notified of any adverse events or if the research does not commence. AUTEC approval needs to be sought for any alteration to the research, including any alteration of or addition to any documents that are provided to participants. You are reminded that, as applicant, you are responsible for ensuring that research undertaken under this approval occurs within the parameters outlined in the approved application.

Please note that AUTEC grants ethical approval only. If you require management approval from an institution or organisation for your research, then you will need to make the arrangements necessary to obtain this. Also, if your research is undertaken within a jurisdiction outside New Zealand, you will need to make the arrangements necessary to meet the legal and ethical requirements that apply within that jurisdiction.

To enable us to provide you with efficient service, we ask that you use the application number and study title in all written and verbal correspondence with us. Should you have any further enquiries regarding this matter, you are welcome to contact me by email at ethics@aut.ac.nz or by telephone on 921 9999 at extension 6902. Alternatively you may contact your AUTEC Faculty Representative (a list with contact details may be found in the Ethics Knowledge Base at http://www.aut.ac.nz/research/research-ethics/ethics).

On behalf of AUTEC and myself, I wish you success with your research and look forward to reading about it in your reports.

Yours sincerely

Dr Rosemary Godbold
Executive Secretary
Auckland University of Technology Ethics Committee

Cc: Saide Lo saide.lo@aut.ac.nz

From the desk of ...
Dr Rosemary Godbold
Executive Secretary
AUTEC

Private Bag 92006, Auckland 1142
New Zealand
E-mail: ethics@aut.ac.nz

Tel: 64 9 921 9999
ext 8860
Fax: 64 9 921 9902

Appendix B - Participant Information Sheet

Participant Information Sheet

Date Information Sheet Produced:

05 January 2012

Project Title

A Comparative Case-Study Analysis on the Effectiveness of Project Governance

An Invitation

My name is Saide Lo and I am currently undertaking this research study as part of my Master of Computer Information Sciences study. I would like to invite you to participate in my research project. This project aims to explore the factors that influence implementation of project governance within an organisation. The outcome of this research will yield useful insights to the IT project community and will lead to better project management implementation strategies in the future.

Your participation is voluntary. No personal information that can identify you will be collected. There are no conflicts or constraints with your participation; you can withdraw from this study at any time prior to the completion of data collection.

What is the purpose of this research?

The purpose of this research is to investigate individual views of the effectiveness of project governance within a project that's developed and managed in a business environment.

How was I identified and why am I being invited to participate in this research?

Your contact details were obtained from a publically available website or business directory. You were selected because of your role and position in your company. That position works with project governance. Your participation is completely voluntary.

What will happen in this research?

Your responses during the interview will be recorded and analysed by the researcher. The results will be in the form of a thesis. No organisation or participant will be identified or will be able to be identified.

What are the discomforts and risks?

Your participant is entirely voluntary. Your participation will involve an interview lasting approximately 30 minutes. The interview will take place at a time and place agreed upon with you. You can pause/stop the interview at any time. You may also request to see the interview transcript.

How will these discomforts and risks be alleviated?

Your confidentiality is assured. You can withdraw from this study at any time during data collection. If you choose to do so all data pertaining to your participation will be destroyed. If you are uncomfortable, doubtful or adverse to any question you may choose not to answer it.

What are the benefits?

This research will contribute to better understand how project governance works within organisations. Moreover, your contribution is an important part of my Master thesis.

How will my privacy be protected?

Your privacy will be protected at all times. The information gathered from you as a participant will not be used for any other purposes apart from the thesis. All information will be anonymised and your personal data remain confidential. In order to achieve privacy and confidentiality, the interview and audio file will be identified only by a code.

What are the costs of participating in this research?

The interviews will to take approximately 30 minutes.

What opportunity do I have to consider this invitation?

If you are interested in participating, please contact me regarding your participation. You may contact me at anytime with questions about this research.

How do I agree to participate in this research?

In order to participate you need to read, understand, agree and sign the attached consent form and return to me by email. Upon the receipt of this consent form, I will arrange a suitable interview time and place with you through email.

Will I receive feedback on the results of this research?

The final thesis will be available for the public at the AUT University library.

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Dr Brian Cusack, brian.cusack@aut.ac.nz Tel. +64 9 921 9999 x 5208.

Concerns regarding the conduct of the research should be notified to the Executive Secretary, AUTEC, Dr Rosemary Godbold, rosemary.godbold@aut.ac.nz, 921 9999 ext 6902.

Whom do I contact for further information about this research?

Researcher Contact Details:

Name: Saide Lo
Email: saide.lo@aut.ac.nz

Project Supervisor Contact Details:

Name: Dr Brian Cusack
Email: brian.cusack@aut.ac.nz
Tel. +64 9 921 9999 x 5208.

Approved by the Auckland University of Technology Ethics Committee on *29 February 2012*, AUTEC Reference number *12/29*.

Appendix C – Consent Form

Consent Form

Project title: ***A Comparative Case-Study Analysis on the Effectiveness of Project Governance***

Project Supervisor: ***Dr Brian Cusack***

Researcher: ***Saide Lo***

- O I have read and understood the information provided about this research project in the Information Sheet dated 05 January 2012.
- O I have had an opportunity to ask questions and to have them answered.
- O I understand that notes will be taken during the interviews and that they will also be audio-taped and transcribed.
- O I understand that I may withdraw myself or any information that I have provided for this project at any time prior to completion of data collection, without being disadvantaged in any way.
- O If I withdraw, I understand that all relevant information including tapes and transcripts, or parts thereof, will be destroyed.
- O I agree to take part in this research.
- O I wish to receive a copy of the report from the research (please tick one): YesO NoO

Participant's signature: .....

Participant's name: .....

Participant's Contact Details (if appropriate):

.....

.....

.....

.....

Date:

Approved by the Auckland University of Technology Ethics Committee on 29th February 2012, AUTEC Reference number 12/29

Note: The Participant should retain a copy of this form.