THE CONTRIBUTION OF
INFORMATION TECHNOLOGY GOVERNANCE
TO DELIVERING BUSINESS VALUE
FROM IT INVESTMENTS

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ABSTRACT

Effective Information Technology (IT) Governance is considered a prerequisite for successful business-IT investment decision-making and organizational success. Effective IT Governance is a holistic concept that involves content (e.g., what is the decision about?), actor (e.g., who makes the decision?), and process (e.g., how is the decision made?) dimensions. However, the rapid development of IT and the pervasiveness of Information Systems (IS) in organizations has made effective IT Governance a complex, and often misunderstood undertaking that is challenging to many organizations. And while research about IT Governance in general has a long history in the IS discipline, a number of important challenges remain unresolved to date. For one, academic research in the IS discipline today lacks sufficient insights to answer how and why effective IT Governance leads to business value. Second, the IS discipline lacks theoretical understanding of the mechanism through which effective IT Governance could yield business value at the organizational level, and is equally unable to explore the IT Governance practices applied by individuals involved in IT Governance processes.

This PhD research aims to address these gaps in knowledge. Positioned in the IS discipline, this PhD research provides the conceptual and theoretical underpinnings to explore effective IT Governance from both, an organizational and individual level. The research design underpinning this inquiry is based on a complementary 2-study design. Study 1 is a conceptual inquiry and adopts an analytical lens centered on the organizational level. Study 2 is a phenomenological inquiry which uses semi-structured interviews to explore effective IT Governance practices from the perspective of individual actors involved in these processes.

Collectively, both studies provide three distinct contributions to the IS literature. First a theoretical contribution is made which includes a model and seven propositions that explain pathways from effective IT Governance to business value on an organizational level. The second theoretical contribution is a model and thirteen propositions that identify the procedural stages that actors involved in IT Governance processes complete at an individual level. Furthermore, this research provides an empirical contribution to the IS literature by generating and highlighting unique evidence regarding the individual practices related to IT Governance.
DECLARATION

This is to certify that

1- this thesis comprises only my original work towards the PhD except where indicated in the Preface;
2- due acknowledgement has been made in the text to all other materials used; and
3- the thesis is fewer than 100,000 words in length, exclusive of tables, maps, bibliographies, and appendices.

Poorang Haghjoo

14 Feb 2018
This preface declares three clear, upfront clarifications about the originality of the work presented in this research thesis.

1. Use of professional editorial advice

This thesis has had the benefit of professional editorial advice, by Ms. Malena McNamara, limited to copyediting and proofreading, as covered in Parts D and E of the Australian Standards for Editing Practice.

2. Publication from the project

The following peer reviewed academic paper (presented in Appendix 4) has been published from this research project and sections of it have been embedded in Chapter 2 and Chapter 4 of this thesis.


3. Source of funding for the project

This PhD research project has been supported through an “Australian Government Research Training Program Scholarship” i.e., Australian Postgraduate Award (APA) scholarship.
ACKNOWLEDGEMENTS

First of all, I would like to thank my supervisors Prof. Graeme Shanks for his endless support and guidance, and Dr. Christoph Breidbach for his invaluable help, encouragement and vital directions during this project. Without his help this PhD wouldn’t be possible. Also, my gratitude extends towards my industry advisors during the early stages of developing ideas for this research project: Marianne Broadbent, Ken Matthews and Mark Toomey. Likewise, I would like to thank the participants of this research project who provided priceless insights and shared their experience and knowledge.

In addition, I would like to acknowledge my first supervisor, Prof. Peter Seddon. Before his retirement, he taught me the fundamentals of how to think.

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<th>Full Form</th>
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<tr>
<td>BV</td>
<td>Business Value</td>
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<tr>
<td>CGEIT</td>
<td>Certified in the Governance of Enterprise IT</td>
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<tr>
<td>EITG</td>
<td>Effective Information Technology Governance</td>
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<tr>
<td>EITGBV</td>
<td>Effective Information Technology Governance Business Value</td>
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<tr>
<td>EJIS</td>
<td>European Journal of Information Systems</td>
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<td>ISJ</td>
<td>Information Systems Journal</td>
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<td>ISR</td>
<td>Information Systems Research</td>
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<td>IT</td>
<td>Information Technology</td>
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<td>ITG</td>
<td>Information Technology Governance</td>
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<td>JAIS</td>
<td>Journal of the Association for Information Systems</td>
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<td>JIT</td>
<td>Journal of Information Technology</td>
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<td>Journal of Management Information Systems</td>
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<td>JSIS</td>
<td>Journal of Strategic Information Systems</td>
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<td>MCITP</td>
<td>Microsoft Certified IT Professional</td>
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<td>MCPD</td>
<td>Microsoft Certified Professional Developer</td>
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<td>MCTS</td>
<td>Microsoft Certified Technology Specialist</td>
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<td>MISQ</td>
<td>Management Information Systems Quarterly</td>
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<td>PMP</td>
<td>Project Management Professional</td>
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<td>PRINCE2</td>
<td>Project IN Controlled Environments 2</td>
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<td>SAFe</td>
<td>Scaled Agile Framework</td>
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<td>SA</td>
<td>SAFe Agilist</td>
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<td>TOGAF</td>
<td>The Open Group Architecture Framework</td>
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1 INTRODUCTION

1.1 Background and Motivation

IT Governance talks about sets of mechanisms that encourage desirable behaviors aligned with the enterprise’s strategy and goals. They include the matters such as critical IT decision processes, the policies guiding these decision processes, and the assignment of accountabilities and participation rights concerning these processes (Sambamurthy and Zmud, 1999; Weill and Ross, 2004, Buchwald, Urbach and Ahlemann, 2014).

Information Technology (IT) projects, including those undertaken in Australia, have suffered various challenges that can be traced to poor and ineffective IT Governance. The common challenges experienced by IT projects include budget overruns and delays, with up to 80% of such projects are unable to deliver the expected benefits on budget and on time (Clarke, 2014). In Australia, IT projects such as the Queensland Health payroll project, the Myki smartcard ticketing system, or the Australian Taxation Office (ATO) technological upgrade program tragedy, are some of the most recent failures of IT projects, whose failure to realize expected value and benefits is attributed to a lack of proper IT Governance. Indeed, a report by the Victorian Ombudsman in 2011 demonstrated that an extra $1.44 billion was incurred across ten projects in expenses due to budget overruns and losses due to exceeding implementation deadlines, which indicates that challenges are prevalent in the application of effective IT Governance (Clarke, 2014).

The rapid development of IT and the pervasiveness of Information Systems in organizations have made IT Governance a complex, challenging, and highly misunderstood undertaking. The continuing difficulty in addressing IT Governance issues in organizations is exemplified by the lack of sufficient IT expertise at the executive levels, which influences the quality of IT-related decisions in the organization (Giordano, 2014). Hence, it is understandable that Benaroch and Chernobai (2017) and Wiedenhoft, Luciano and Magnagnagno (2017) observed that the severity of operational failures of IT foregrounded the challenges that firms were experiencing regarding IT Governance, and that models for the operationalizing
mechanisms of IT Governance were required to remedy the situation. Indeed, there was need to
ground IT Governance practice in sound theoretical underpinnings to ensure that organizations
understood the manner in which they would derive maximum and intended business value
(Brown, 2015). Moreover, according to Buchwald, Urbach and Ahlemann (2014), greater
understanding of the value chain of IT, its deployment, and the adequacy of its regulations could
erange business value. Lastly, the deployment of IT under effective IT Governance
mechanisms facilitates the enhancement of organizational performance, and is also a source of
competitive advantage (Drnevich and Croson, 2013). In fact, such conceptual understanding
supported by evidence may help organizations to deploy their IT resources in a manner that
advances the strategy of the organization in the short and long terms, and thus counters the
ongoing worrisome spate of failures in deployment of IT and in deriving business value from
such investments, as indicated by The Standish Group (2009) and Weill and Woodham (2002).

Numerous publications have claimed the benefits of effective IT Governance. Examples
include protection of shareholder value and clearly managing IT risks (Guldentops, 2004),
targeting the realization of enterprise-wise strategic priorities (Weill and Ross 2004), maintaining
organizational competitiveness (Broadbent, and Kitzis, 2005), and enabling external compliance
(NCC, 2005). However, academic research in the Information Systems discipline today lacks
sufficient insights to answer how and why effective IT Governance leads to the claimed benefits.
More specifically, Buchwald, Urbach and Ahlemann (2014, p. 1) argued that:

“Some studies investigate individual aspects of IT Governance success and its impact,
[however] none combine these factors into a comprehensive and integrated model that
would lead to a more complete understanding of the IT Governance concept.”

Specifically, Wu, Straub and Liang (2015) found that there was insufficiency in theory
based on empirical evidence concerning the factors affecting strategic alignment, which relate to
the mechanisms and actual practices of IT Governance (e.g., the ‘how’) that lead to the claimed
benefits. Overall, the Information Systems discipline lacks theoretical understanding of the
mechanism through which effective IT Governance could yield business value at the
organizational level (Buchwald, Urbach and Ahlemann, 2014; Drnevich and Croson, 2013), and
is equally unable to explore the IT Governance practices applied by individuals (Gordon, 2012;
Turel and Bart, 2014). The present study aims to address these questions.
1.2 Positioning the Study

This study is positioned in the Information Systems discipline, which provides the conceptual and theoretical underpinnings to explore IT Governance on an organizational level as called for by Buchwald, Urbach and Ahlemann (2014) and Drnevich and Croson (2013), and on an individual level, as called for by Gordon (2012) and Turel and Bart (2014).

At the organizational level, current gaps in knowledge include insufficient and inadequate theoretical understanding of the manner in which, and the reasons why, effective IT Governance leads to business value (Buchwald, Urbach and Ahlemann, 2014). A general concern is that the benefits of desirable behavior in the use of IT are often credited to effective IT Governance, but how IT Governance effectiveness contributes to doing that, and eventually how that leads to business value, have not received enough research attention (Drnevich and Croson, 2013). Also, the ‘why’ and ‘how’ of effectively governing IT in an organization, as well as mechanisms or criteria to employ, have also been given insufficient weight in the various literature considered. Therefore, a lack of theoretical knowledge, in the form of ambiguous definition of terms, limits the understanding and implementation of effective governance strategies and interventions related to IT in organizations. For instance, Brown (2015) found that the effectiveness of IT Governance was assumed by academic researchers, although this was not the case in reality for many organizations that were endeavoring to implement and manage systems for IT Governance. As such, a research-practitioner disconnect existed in the many studies undertaken, which undermined academia’s contribution to the improvement of decision-making about IT and the manner in which IT was controlled and influenced within organizations. In addition, Brown (2015) observed that analysis of the performance of IT Governance overemphasized the structural foundation of the governance system and ignored the behavioral aspects. Therefore, it was pertinent to remodel the analysis of the IT Governance domain to include mechanisms of IT Governance that incorporated behavioral and structural components as well. In this regard, it was necessary to conceptualize the organizational routines that would be expected in effective mechanisms of an IT Governance system. Likewise, Buchwald, Urbach and Ahlemann (2014) suggested that there was a lack of an integrated model. A model that was able to combine the factors that determined the success of IT Governance and its impact on the organization in which investments in IT had been made. The researchers went on to observe that understanding of the
value chain in IT and the adequacy of regulations therein were constructs that were given little attention in IT Governance issues, although they were frequently invoked in other streams of research such as those dealing with organizational empowerment (Gordon, 2012; Turel and Bart, 2014). Mahy, Ouzzif, and Bouragba (2016) alluded to a lack of consensus in literature, which caused IT Governance to be challenged by definitions, approaches, frameworks and standards. As such, a definition of IT Governance could be improved by including the manner in which IT processes interact to deliver enhanced business value, as would be exhibited by the value chain of the IT benefits in the organization. In addition, Buchwald, Urbach and Ahlemann (2014) also noted that operationalization of their integrated IT Governance model’s constructs was needed in order to improve understanding of the interrelatedness of various concepts therein. Indeed, Janahi, Griffiths and Al-Ammal (2015) observed that IT Governance was an evolving area, as the technologies and applications of IS evolve while Yassaee and Mettler (2015) found that the value accrued from IT Governance continued to transform due to the rapid development of technologies.

At the individual level, a lack of empirical work limits our understanding of the mechanisms that underpin how and why effective IT Governance leads to business value from IT investments. The much-needed focus on organizations’ senior management was justified by Turel and Bart (2014), who noted that previous research had ignored board members, even though they could influence IT Governance at the board level and thus potentially influence organizational performance, which is directly related to the business value created therein. Further, Gordon (2012) identified the link between IT Governance and alignment with strategy needs more development, which necessitated the correlation of governance structures and other governance competencies with an organization’s IT strategy to explain the optimal operation of the governance structures of IT. Turel and Bart (2014) insisted that the senior management of organizations should not be ignored, because of their influence on IT Governance at the board level, and in directing organizational strategy. Figure 1.1 displays the findings of earlier work and shows how this thesis builds on them.
**Why/How Effective IT Governance leads to Business Value**

<table>
<thead>
<tr>
<th>Organizational level</th>
<th>Individual level</th>
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<td>- Insufficient and inadequate theoretical understanding</td>
<td>- Lack of empirical work</td>
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<td>- Benefits of desirable behavior in the use of IT are often credited to</td>
<td>- Much-needed focus on organizations’ senior management</td>
</tr>
<tr>
<td>- Ambiguous definition of terms effective IT Governance</td>
<td>- Missing link between IT Governance and alignment with strategy</td>
</tr>
<tr>
<td>- Behavioral and structural aspects were not paid enough attention</td>
<td>- Need for the correlation of governance structures/competencies with an organization’s IT strategy to explain the optimal operation of the governance structures of IT</td>
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<tr>
<td>- Lack of an integrated model</td>
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Information Systems Discipline

Figure 1.1: Positioning of this study
1.3 Research Objective and Questions

The main objective of this research is to investigate how and why effective IT Governance contributes to delivering business value from IT investments. Specifically, this research adopts an organizational and an individual actor perspective, thus addressing the aforementioned gap in the Information Systems research literature outlined by Buchwald, Urbach and Ahlemann (2014), and Drnevich and Croson (2013). Answering these research questions will help to provide a comprehensive explanation of the causal relationship of how and why effective IT Governance leads to business value from IT investments. As recommended by Miles and Huberman (1994), the research objective will be addressed through the following research questions:

Research Question 1:

**How and why do organizations generate business value from IT investments through IT Governance?**

Research Question 2:

**How and why do individual actors engage in IT Governance practices, and how do they thereby generate business value from IT investments?**

1.4 Research Design and Method

The research design underpinning this work is based on two complementary studies. Study 1 is a conceptual inquiry (Rocco and Plakhotnik, 2009) that reviews and re-conceptualizes existing theories, constructs and concepts found in the relevant IT Governance literature. Conceptual inquiries have a long-standing history in the Information Systems discipline, considering that they are interrogations of the theories and underlying concepts, beliefs, assumptions, and expectations that facilitate the process of knowing and understanding a real event (Imenda, 2014). Specifically, a conceptual method is applied as a tool for theory building, because it utilizes existing relevant literature to develop a model (Maxwell, 2012). In this model, already established concepts and constructs are rearranged to make an implicit idea become explicit which, in turn, forms the basis for development of system designs that can explain outcomes of an information system (Galliers, 1991; Goldkuhl, 2012). For these reasons,
conceptual studies have been used for studies pertaining to cloud computing (Martini and Choo, 2012), knowledge management (Alhawari et al., 2012), and project governance (Too and Weaver, 2014). Here, the conceptual inquiry in Study 1 aims to develop new links that facilitate understanding of how and why organizations generate business value from IT investments through IT Governance.

For the conceptual study, data was obtained from existing literature. Specifically, effective IT Governance and business value are deconstructed into underlying concepts, which can be defined unambiguously and employed in a conceptual model. Thereafter, the existing knowledge will be consolidated into three pathways (Process, Content and Actor) that can be used to interlink effective IT Governance and business value. Each of the three pathways (Process, Content and Actor) addresses either the ‘how’, the ‘what’ or the ‘who’ as linkage parameters between effective IT Governance and business value. The outcome of this study is a conceptual model that introduces and explains the constructs that facilitate understanding of the link between effective IT Governance and business value. It does so by using the Process, Content and Actor dimensions from the organizational perspective (Weill and Woodham, 2002). The conceptual study elucidates the mechanisms required to translate IT Governance into the business value that can be obtained from IT investments and capabilities.

Study 2 is a phenomenological inquiry, and aims to investigate how and why individual actors engage in generating business value from IT investments through IT Governance. As with the conceptual inquiry in Study 1, phenomenological studies have a long-standing history in the Information Systems discipline and have been applied in contexts such as cloud computing (Anshari, Alas and Guan, 2016), IT Governance (Liaw et al., 2014) and sociomateriality (Gaskin et al., 2014). A phenomenological inquiry was chosen because it provided the much-needed rich understanding about IT Governance practices by individuals, including their perceptions, attitudes, and beliefs (Shanks, Arnott and Rouse, 1993).

The phenomenological study focuses on events, experiences and occurrences in particular it studies the manner in which individuals perceive the meaning of events as opposed to the manner in which events exist beyond what the people perceive (Denscombe, 2014). Therefore, a phenomenological study aimed to identify, from the perspective of individual actors in organizations, the IT Governance practices used. As such, the interviewees of the study...
comprised members of senior management, such as chief executive officers, chief financial officers and chief information officers. Top tier executives and managers from various organizations based in Australia, with annual revenues of 500 million dollars and over, were interviewed. The interview transcripts were subjected to concept coding to help the researcher identify short phrases and words that represented larger ideas that appeared in the data (Saldana, 2015). From there, thematic analysis was conducted by analyzing the patterns and reoccurring themes that became apparent following the coding stage (Taylor, Bogdan, and DeVault, 2015). The content analysis revealed the decision-making processes and practices as perceived by the actors related to IT Governance.

1.5 Chapter Summary and Thesis Structure

This chapter introduces the present PhD research. A review of the gaps in the current literature helped to develop research objectives that were translated into researchable questions. In addition, a review of existing literature from a variety of disciplines enabled positioning of the study within the existing knowledge regarding governance of IT. Thereafter, the conceptual and phenomenological methodologies that were employed in the study were explained.

Therefore, this thesis is structured in a chapter-based format as presented in Figure 1.2 below. Specifically, Chapter 1 introduces the research, while Chapter 2 details the review of literature associated with the research. Chapter 3 explains the research methodology for the conceptual and phenomenological studies, while Chapters 4 and 5 provide the findings of both studies. Thereafter, Chapter 6 discusses the findings against the backdrop of existing literature, while Chapter 7 concludes the thesis by identifying the theoretical and empirical contributions made by the research. Finally, the study’s limitations, future research opportunities, and the implications of the study for managerial practice are provided. Parts of this research have been published in a peer reviewed academic paper (presented in Appendix 4) and sections of it have been embedded in Chapter 2 and Chapter 4 of this thesis.
Figure 1.2: Structure of the Thesis
2 LITERATURE REVIEW

2.1 Chapter Introduction

A literature review is a critical analysis that identifies a gap in knowledge in order to justify doing further research\(^1\). It does so by analyzing all previous research findings on different aspects of similar subjects. Essentially, it is an evaluative and critical analysis report of information that has been collected from the literature related to the selected area of study. A theoretical base is provided by the review, which helps in identifying the nature of the research, and in understanding the subject more fully. In conducting a literature review, the researcher needs to focus on different secondary sources, such as journals, books, articles, websites of organizations, annual reports, news and blogs, etc. (Bryman, 2015). For the current study, the review assists in providing a historical background on IT Governance and its association with business value, allowing sufficient insight in order to understand the research problem comprehensively. The major objective of this literature review is to determine the effectiveness of IT Governance in increasing business value. In addition to this, the study gives attention to the reason behind the impact of effective IT Governance on business (Tambotoh and Latuperissa, 2014). So, in order to attain these objectives and understand the research problem, the author has conducted a literature review on different aspects of IT Governance, which includes the relationship between IT Governance and corporate governance, as well as management. The author analyzes the effectiveness of IT Governance and its contribution to delivering business value by using different models and theories. Subsequently, the author determines the research gap in order to formulate the objectives of the current study (Kirkwood and Price, 2014).

In recent history, many large IT investments have failed for various reasons (Weill and Woodham, 2002 and The Standish Group, 2009). For example, Weill and Woodham (2002) cited the commonality of newly developed applications that were used improperly, e-business projects that were ill conceived or poorly implemented, and major enterprise resource planning (ERP)-system implementations that were never completed. On the other hand, they also reported that

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\(^1\) Parts of this chapter have been published in a peer reviewed academic paper (presented in Appendix 4).
returns on IT investments in some enterprises have exceeded the industry average. These successful enterprises make not only better, but also more effective, IT decisions than most companies (Weil and Woodham, 2002). Moreover, enterprises that make successful IT investments overall do so because they have superior IT Governance (Weill and Woodham, 2002). In fact, it is claimed that IT Governance effectiveness is the single most significant predictor of the value that an organization can generate from IT. "Good governance design allows enterprises to deliver superior results on their IT investments. We conclude that effective IT Governance is the single most important predictor of the value an organization generates from IT" (Weill and Ross, 2004). In fact, based on a study of over 250 firms from America, Europe and Asia Pacific, companies with focused strategies and above-average IT Governance capabilities had more than 20 percent higher profits than other firms following the same strategies but with less effective IT Governance (Weill and Ross, 2004).

Similarly, it is argued that IT Governance allows an enterprise to more effectively concentrate on major business issues such as ERP and e-commerce, and helps to guarantee the security, integrity and reliability of an organization’s strategic information. Effective IT Governance ensures that an enterprise benefits from current business opportunities and prevents potential business threats (Lainhart, 2000). Ultimately, the goal of IT Governance is to achieve strategic alignment between business and IT, to ensure that IT investment is leading to business value (De Haes and Van Grembergen, 2005). The knowledge claim implied by these authors is shown in Figure 2.1.

![Figure 2.1: The knowledge claim by researchers mentioned above.](image)

Although many studies have claimed that effective IT Governance leads to benefits of some kind, neither the definition nor the characteristics of effective IT Governance have been addressed comprehensive enough. Similarly, the theoretical reasoning as to how and why effective IT Governance may lead to business value has not been argued comprehensively, let alone supported by sufficient empirical evidence. Additionally, the volume of academic literature that discusses this topic is comparatively modest. Moreover, understanding if some forms of IT Governance could be more effective and lead to more successful delivery of business value from IT investments, and if so, which ones are the most effective, and why needs more clarification.
In response to these points of uncertainty, this chapter contains a literature review on what is best known about IT Governance, its dimensions, and how it can be employed effectively, as well as a clarification of definitions and an exploration of the specific business benefits that can be achieved through effective IT Governance. Results uncovered during the literature review are used to seek answers to the following initial questions:

- What is IT Governance?
- How is IT Governance effectiveness defined?
- What are the benefits of effective IT Governance?

Once the above questions were answered and definitions were made clear, the platform is ready to seek answer to the main research question of this study:

- How does effective IT Governance lead to those benefits and why?

This question will be then extended in more detail to find out how and why effective IT Governance leads to business value from a) organizational point of view and b) from an individual actor’s lens involved in business IT investment decision-making.

As presented in Figure 2.2 below, this chapter begins by explaining the literature-review methodology used in this study. A definition of IT Governance based on a three-dimensional framework is proposed as the result of a systematic analysis, followed by a summary of key dimensions of IT Governance and the meanings of those dimensions. The definition of effective IT Governance is discussed next, and a conclusive definition is presented based on the proposed multi-dimensional framework. The next section provides an analysis of the claimed benefits of effective IT Governance. Through this review, a literature gap will be determined. The chapter concludes with a discussion of the findings and articulation of the research questions that will be used to address the identified knowledge gap. This in turn establishes a need for synthesis into an explanatory model. The following chapters describe a conceptual and a phenomenological study, intended to both produce an output to the initial research model, and answer the main research question of how and why effective IT Governance leads to the claimed benefits.
Chapter 2 – Literature Review

Figure 2.2: Structure of Chapter 2 – Literature Review
2.2 Literature Review Methodology

2.2.1 Selection Criteria

To conduct a literature review on IT Governance and its impact on organizations, the author needed to follow an appropriate literature search strategy. The author used specific key words from the research title to obtain relevant sources. In addition to this, the researcher focused on time of publication. Further, the author applied specific inclusion and exclusion criteria for selecting articles. The current research includes articles that are based only on IT Governance, IT management and business value. Further, the author chose only those articles that were written in a universal language (English). The author excluded all research articles that did not mention IT Governance and that were published before 1990. So, this literature search strategy assisted in finding valuable literature for understudying the current research problem effectively.

Two methods were used with different criteria to ensure rigor in selecting papers for conducting the literature review. First, publications with a large number of citations in total (greater than twenty-five) and citations per year (minimum of five) were selected by filtering the Google scholar search engine (using Publish or Perish) with keywords such as “IT Governance”, “Information Technology Governance” and “Governing Information Technology”. However, this method could have resulted in the exclusion of some useful publications. For that reason, the titles of publications in the Senior Scholars’ Basket of Journals on IS (AIS website, June 2012) were also reviewed. These journals included EJIS, ISJ, ISR, JAIS, JIT, JMIS, JSIS and MISQ. Fifty (50) studies written in English and related to IT Governance were identified through this process, including the following four books: \textit{IT Governance: How Top Performers Manage IT Decision Rights for Superior Results} by Weill and Ross (2004), \textit{Strategies for Information Technology Governance} by Van Grembergen (2004), \textit{Implementing Information Technology Governance: Models, Practices, and Cases} by Van Grembergen and De Haes (2008) and \textit{Enterprise Governance of Information Technology: Achieving Strategic Alignment and Value} by Van Grembergen and De Haes (2009).
Second, to capture practitioners’ opinions on the topic the author also searched for industry papers (or reports) within the IT Governance sector. This search yielded four more valuable professional publications from the IT Governance Institute (ITGI), ISACA and National Computing Centre (NCC). These publications were *Board Briefing on IT Governance, 2nd Edition* (ITGI); *The Balanced Scorecard and IT Governance* (ISACA); *IT Governance:
Developing a successful governance strategy; A Best Practice Guide for decision makers in IT (NCC), and COBIT5, A Business Framework for the Governance and Management of Enterprise IT (ISACA). Thus, overall, 54 publications were selected for content analysis.

2.2.2 Content Analysis

Analysis of these 54 publications was conducted in two steps. In the first step, all selected publications were reviewed to find a clear, inclusive and transparent framework that was more likely to cover areas of IT Governance. As a result of reading of all 54 publications, it was inferred that there are three core elements of IT Governance based on the three main questions that effective IT Governance should address (Weill and Ross, 2004): a) what the business-IT related decision is about, b) who makes those decisions and c) how it can be implemented. These three elements of IT Governance can be referred to as the three dimensions of Content Perspective (Decision Domain), Actor Perspective (IT Governance Style) and Process Perspective (IT Governance Mechanisms) and are described below (Broadbent and Kitzis, 2005):

**Content Perspective (Decision Domain):** to which types of decision do the governance rules apply, e.g., choice of applications, choice of IT architecture?

**Actor Perspective (IT Governance Style):** Who makes IT investment decisions, who provides input and who should be accountable for the decision-making process?

**Process Perspective (IT Governance Mechanisms):** How are IT decisions made? What are the ways and procedures of implementing IT Governance Styles?

These three elements offered a potential pathway for (a) identifying common ground in many definitions of IT Governance, and (b) providing greater insight into the meaning of ‘IT Governance’ than what has been provided by studies previously.

In the second step, the selected publications were reviewed to assess the extent to which the above three dimensions of IT Governance (Content-Actor-Process) were discussed. For this purpose, two stages of coding were applied (Neuman, 2011). In coding stage A of this second step, publications in the full dataset were tagged with various definitions related to IT Governance: for example, Business Application Need; IT Architecture; IT Investment and Prioritization; Accountability; Relationships; Tools and Techniques, and Implementation. Themes close to Broadbent and Kitzis’ (2005) three IT Governance elements (Decision Domain,
IT Governance Style, and IT Governance Mechanisms) were also identified. For instance, in the following paragraph by Schwarz and Hirschheim (2003), any parts of the text conceptually close to a construct in IT Governance were underlined and tagged (tags are shown in brackets).

“Despite these limitations, we believe that focusing on the core underpinnings of successful IT organizations in practice should help other organizations successfully adapt to the new reality unfolding before us. More specifically, by examining the relational and integration architectures of the model [IT Architecture], we have documented how IT interacts with the business units [Relationships][Business Application Needs]. By investigating IT capabilities, we have seen how IT views itself and its position within the firm. By examining the various success metrics, we have seen the variety of methods that IT can use to determine its impact on the firm [Techniques]. Our results suggest that researchers need to change their views of IT ‘structure’ to embrace a more social and dynamic existence. Fundamentally, IT Governance has moved beyond structure to embrace relationships. For the practitioner, there is no longer the need to focus on centralization/decentralization, but on how relationships are formed and managed [Relationships].”

In another example, a paragraph from De Haes and Van Grembergen’s paper (2005) is coded below.

“IT Governance is one of these concepts that suddenly emerged and became an important issue in the IT area. Some organizations have started with the implementation of IT Governance in order to achieve the fusion between business and IT. This paper describes how an organization can implement IT Governance [Implementation], using a mixture of processes, structures and relational mechanisms [Techniques], and analyzes the IT Governance implementation at KBC, a major Belgian financial group.”

In coding stage B, codes and tags were grouped into more general groups that were ultimately linked to the three dimensional framework of Content (Decision Domain) – Actor (IT Governance Style) – Process (IT Governance Mechanism). For example, “Business Application Need”, “IT Architecture”, and “IT Investment and Prioritization” were grouped into the Content dimension (“Decision Domain”); “Accountability” and “Relationships” were considered to be aspects of the Actor dimension (“IT Governance Style”); and finally, “Tools”, “Techniques”, and
“Implementation” were classified as the Process dimension (“IT Governance Mechanisms”). Table 2.1 shows example coding of the above two paragraphs.

Table 2.1: Three levels of coding of the sample two paragraphs above

<table>
<thead>
<tr>
<th>Author(s) Year</th>
<th>Underlined text</th>
<th>Coding Stage A</th>
<th>Coding Stage B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schwarz and Hirschheim (2003)</td>
<td>“relational and integration architectures of the model”</td>
<td>IT Architecture</td>
<td>Content Perspective (Decision Domain)</td>
</tr>
<tr>
<td></td>
<td>“how IT interacts with the business”</td>
<td>Relationships</td>
<td>Actor Perspective (IT Governance Style)</td>
</tr>
<tr>
<td></td>
<td>“how IT interacts with the business”</td>
<td>Business Application Need</td>
<td>Content Perspective (Decision Domain)</td>
</tr>
<tr>
<td></td>
<td>“methods that IT can use to determine its impact on the firm”</td>
<td>Techniques</td>
<td>Process Perspective (IT Governance Mechanisms)</td>
</tr>
<tr>
<td></td>
<td>“how relationships are formed and managed”</td>
<td>Relationships</td>
<td>Actor Perspective (IT Governance Style)</td>
</tr>
<tr>
<td></td>
<td>“a mixture of processes, structures and relational mechanisms”</td>
<td>Techniques</td>
<td>Process Perspective (IT Governance Mechanisms)</td>
</tr>
</tbody>
</table>

2.2.3 Analysis Result

The key finding from the review of these 54 publications is that, although definitions of IT Governance differ considerably, the three dimensions of IT Governance (Content-Actor-Process) appear to be important elements of IT Governance in the majority of the selected studies. A summary of findings from the literature on the key elements of effective IT Governance (ordered by author) is shown in Appendix 1.
2.3 Defining IT Governance

What constitutes IT Governance and how is IT Governance effectiveness defined? The literature concerning IT Governance can be hard to understand, because different authors have used different definitions of IT Governance, and the various claims they make about the benefits of effective IT Governance are therefore contingent upon those definitions. For example, Table 2.2 presents definitions of IT Governance from the five most highly-cited articles (using Google scholar, November 2016) that proposed a definition of IT Governance. These definitions are clearly different. For example, “IT-related structures or architectures”, in definition 1, are clearly very different to “the framework for decision rights and accountabilities” in definition 4.

2.3.1 Definition of IT Governance

Based on the literature review reported above, the definition of IT Governance to be used in this study is as follows:

*IT Governance is an organization’s framework for business-IT decision-making. It involves specifying (a) in what domain(s) the decision-making process will be involved, (b) who makes the decisions and who is to be held accountable for what aspects of those decisions, and (c) how these decisions should be made and supervised.*

The above definition of IT Governance is the result of a comprehensive analysis of the literature, which is explained in detail below. In response to the uncertainty about definitions of IT Governance, and the contingency of IT Governance effectiveness and its claimed benefits on the definition of IT Governance, the multi-dimensional framework described above was used to offer a potential pathway for a) identifying common ground in different definitions of IT Governance, and b) providing greater insight into the meaning of ‘effective IT Governance’.
Table 2.2: Five definitions of IT Governance (ordered by year), guided by Webb et al. (2006)

<table>
<thead>
<tr>
<th>Author (Year)</th>
<th>Definition of IT Governance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Sambamurthy and Zmud (1999)</td>
<td>The <strong>IT-related structures or architectures</strong> (and associated authority pattern) implemented to successfully accomplish (IT Imperative) activities in response to an enterprise’s environmental and strategic imperatives.</td>
</tr>
<tr>
<td>2 Korac-Kakabadse and Kakabadse (2001)</td>
<td>IS/IT Governance concentrates on the structure of <strong>relationships and processes</strong> to develop, direct and control IS/IT resources in order to achieve the enterprise’s goals through value adding contributions, which account for balancing risk versus return over IS/IT resources and its processes.</td>
</tr>
<tr>
<td>3 Patel (2003)</td>
<td>E-business IT Governance has been conceptualized as encompassing both <strong>systematic and planned activities and organic emergent needs</strong> to ensure successful e-business applications development. E-business models need to cater for emergent requirements and regard suppliers, business partners, and especially customers as integral.</td>
</tr>
<tr>
<td>4 Weill (2004)</td>
<td>IT Governance is defined as specifying <strong>the framework for decision rights and accountabilities</strong> to encourage desirable behavior in the use of IT.</td>
</tr>
<tr>
<td>5 Webb et al. (2006)</td>
<td>IT Governance is <strong>the strategic alignment of IT with the business</strong> such that maximum business value is achieved through the development and maintenance of effective IT control and accountability, performance management and risk management.</td>
</tr>
</tbody>
</table>

A detailed review and systematic analysis of the definitions of IT Governance presented in Table 2.2 revealed four aspects of IT Governance that these definitions seek to clarify: the what, who, how (Content, Actor, Process) and the objective of IT Governance. It is clear that the first three sections in the provided definitions, which are the same dimensions of IT Governance inferred from the literature review analysis above, describe the elements of IT Governance, whereas the last section, the goal of IT Governance presented in each definition above, is an explanation of the objective of IT Governance. The benefit(s) of effective IT Governance, as well as how and why those benefits are achieved through effective IT Governance, will be discussed in detail later in this chapter. Hence, the focus of the present analysis was on the first three sections (Content-Actor-Process). The result of this analysis, presented in Table 2.3 below, demonstrates the general inadequacy of the definitions in covering all of these three areas.
Table 2.3: Systematic analysis of the five most highly-cited articles that define IT Governance

<table>
<thead>
<tr>
<th>Author (Year)</th>
<th>Content Perspective</th>
<th>Actor Perspective</th>
<th>Process Perspective</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sambamurthy and Zmud (1999)</td>
<td>N/A</td>
<td>authority pattern</td>
<td>structures or architectures</td>
<td>to successfully accomplish (IT Imperative) activities in response to an enterprise’s environmental and strategic imperatives</td>
</tr>
<tr>
<td>Korac-Kakabadse and Kakabadse (2001)</td>
<td>develop, direct and control IS/IT resources</td>
<td>N/A</td>
<td>relationships and processes</td>
<td>to achieve the enterprise’s goals through value adding contributions</td>
</tr>
<tr>
<td>Patel (2003)</td>
<td>systematic and planned activities; organic emergent needs</td>
<td>N/A</td>
<td>E-business models need to cater for emergent requirements and regard suppliers,</td>
<td>to ensure successful e-business applications development</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>business partners, and especially customers as integral</td>
<td></td>
</tr>
<tr>
<td>Weill (2004)</td>
<td>N/A</td>
<td>the framework for decision rights and accountabilities</td>
<td>N/A</td>
<td>to encourage desirable behavior in the use of IT</td>
</tr>
<tr>
<td>Webb et al. (2006)</td>
<td>strategic alignment of IT with the business</td>
<td>N/A</td>
<td>through the development and maintenance of effective IT control and accountability,</td>
<td>such that maximum business value is achieved</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>performance management and risk management</td>
<td></td>
</tr>
</tbody>
</table>

Other definitions focus on only the objectives of IT Governance, or on some aspects but not all. For example, it is claimed that the primary objectives of IT Governance are to guarantee that IT interests produce business value, and to relieve the risks that are connected with IT (Tambotho and Latuperissa, 2014). Similarly, IT Governance has been considered the main area of accountability for the board of directors and executive management of an organization (Who dimension). It is an integral part of enterprise governance and consists of leadership and organizational structures and processes (How dimension) (ITGI, 2001). Also, it is believed that
IT Governance concerns “How IT decisions are made, who gets to make them, and who's accountable for what” (Broadbent and Kitzis, 2005). Applying to this definition the same systematic analysis technique presented above, it is clear that this definition is more focused on the “How” and “Who” (Process and Actor) dimensions of IT Governance but does not address “What” the business-IT decision is about (Content). Although these definitions address different aspects of IT Governance, there is no single definition that exists currently that has covered all three dimensions of the What-Who-How framework.

So, based on the analysis of the literature presented above, the definition of IT Governance in this study is outlined below:

*IT Governance is an organization’s framework for business-IT decision-making. It involves specifying (a) in what domain(s) the decision-making process will be involved, (b) who makes the decisions and who is to be held accountable for what aspects of those decisions, and (c) how these decisions should be made and supervised.*

Note that points (a), (b), and (c) in this definition correspond to the three dimensions inferred from the literature review above. Note also that this definition addresses all three dimensions of IT Governance, which had not been covered inclusively by any single definition of IT Governance previously presented in Table 2.2. This is a more comprehensive definition than the other definitions presented in Table 2.2, because it encompasses all of the strategic dimensions of other definitions.

This definition is a) more comprehensive, as it encompasses all three dimensions of IT Governance discussed in the literature, and b) consistent with previous studies that provided a definition of IT Governance.
2.3.2 *IT Governance vs IT Management*

The difference between IT Governance and IT management is often misinterpreted (Salle, 2004; Williams and Karahanna, 2013). It is important to note that IT Governance must be distinguished from IT management. To drive desirable behaviors, IT Governance concerns inputs and decision rights, whereas IT management concerns the actual making and implementation of particular IT decisions (Broadbent and Weill, 1998; Weill and Woodham, 2002; Broadbent and Kitzis, 2005; Rahimi, Moller and Hvam, 2014).

In other words, IT Governance concentrates on both (a) contributing to present business operations and performance, as well as (b) meeting future business challenges by aligning and transforming IT; IT Management is instead responsible for providing efficient and effective IT products and services, as well as managing day-to-day IT operations (Figure 2.4, Peterson 2004).

The business objectives defined by enterprise governance become inputs into IT Governance in order to derive aims, objectives and performance measures related to managing IT successfully. Simultaneously, to measure the success of the organization’s performance, the auditing processes are inaugurated (Salle, 2004). The relationship between IT Governance and IT management is displayed in Figure 2.4 below.

![Figure 2.4: IT Governance and IT (Service) Management, Salle (2004)](image_url)
On the other hand, effectively making decisions, communicating the decisions and monitoring how they are accomplished are done by managers who must know the industry, social environment and the decision making processes very well (Simon, 1987). IT management entails the allocation and management of technological resources within a firm, based on the needs and priorities of the company (Van Grembergen and De Haes, 2017). IT management can be defined as a process that plays a significant role in managing IT resources to satisfy the needs and requirements of companies. The major objective of IT management is to increase the value of the business using different IT sources, such as networking hardware, software, computers, data, and people, etc. (Schnoll, 2015).

Pre-characterized IT administration principles act as a guide, giving a firm tried practices and strategies to direct planning activities and decisions. Measures set a benchmark for how activities are overseen and administrations are conveyed, which saves time, enhances quality and lowers expenses (Schwalbe, 2015). However, "norms" by themselves are insufficient. They must be the "right" measures for a firm’s needs. The "right" gauges will dependably be adequately significant, reasonable, pertinent, adaptable, and they must address the administration requests (problem management, strategic planning, strategy advancement and ventures). These are the zones where reason, capability and efficiency are most required and can have the most noteworthy effect (IT Toolkit, 2015).

IT managers need to achieve institutional alignment among strategic practices to make effective decisions and resolve innovation issues. IT directors must achieve institutional alignment of noteworthy practices to represent and control the formation of all required IT administration alignments, strategies, and techniques. IT directors require a "needs-based" resource lifecycle to effectively oversee ventures, explore limitations, and convey streamlined results when planning or producing reports (Van Grembergen and De Haes, 2017). Managers and administrators develop, run and supervise execution of decisions on a daily basis, which need to be aligned with the long-term business strategies provided by the board of directors and other governance bodies (Gallagher and Worrel, 2008; Webb et al., 2006). As a hierarchical department, IT operations are the most successful when they are approached with a benchmarks-based attitude that is both adaptive and responsive to change. Thus, the consistent assessment of decision-making strategies in terms of how well they suit organizational needs, objectives, and
abilities is essential, as well as the ability to change with the times to suit new business and innovation directions (IT Toolkit, 2015).

On the other hand, IT Governance sets up chains of obligation, power, and correspondence (decision rights) and sets up estimation, strategy, policy, and control instruments to empower individuals to accomplish their responsibilities (Mueller and Phillipson, 2007). The main focus of IT Governance is on the strategic alignment that exists between the objectives and targets of the business and the use of its IT assets to adequately accomplish the desired results (Mueller and Phillipson, 2007). In addition to this, governance is not the reserve of large organizations only. Small organizations also require good governance (De Haes and Van Grembergen, 2015).

A critical and verifiable concern in the above IT Governance definitions is the absolute connection between business orientation and the present and future business targets. There is an unmistakable qualification between IT management and IT Governance, which is shown below (Peterson, 2004).

![Figure 2.5: IT Governance and IT Management](Source: Peterson, 2004)

IT Governance is centered around the successful and proficient internal use of IT products and services, as well as the governance of present IT operations, although these operations are managed by IT management (Selig, 2015). Thus, IT Governance is much more extensive and focuses on performing and changing IT to meet present and future requests of the business (inner focus) and business clients (outer focus). Separation exists between the idea of IT Governance and the idea of IT management, as delineated in Figure 2.6. This figure
demonstrates that governance has a more extensive time measurement and looks beyond the scope of day-to-day operations (Valacich and Schneider, 2015).

![Figure 2.6: Separation of IT Governance and IT Management](ServiceXen, 2008)

Although IT management deals with providing competent internal IT services to the organization and current IT operations, while IT Governance tackles business IT transformation and alignment with business objectives (Van Grembergen and De Haes, 2008), they should not be isolated from each other as they are strongly interdependent (Pereira and da Silva, 2012).

### 2.3.3 Interdependence of Corporate Governance with IT Governance

Corporate governance is the framework by which entire organizations are coordinated and controlled (Tricker and Tricker, 2015). Over time, data innovation has become a facet of corporate governance that cannot be overlooked. Corporate governance ought to, in this way, drive and facilitate IT Governance. IT, in its turn, can be used in a way that opens doors for innovation at the enterprise level, and can lend basic information or data to strategic initiatives (Turel et al., 2014).

Along these lines, IT Governance empowers the organization as a whole to utilize data in the most advantageous ways, and can be seen as a driver for corporate governance (Satidularn, Tanner and Wilkin, 2011). In this way, it can be considered that IT Governance and corporate governance are not distinct immaculate orders, and IT Governance should be incorporated into the general governance structure. The closeness in the relationship between IT and corporate governance can likewise be a definition of corporate governance: corporate governance "manages the ways in which suppliers of money guarantee themselves of getting an ROI” (Juiz, Guerrero and Lera, 2014). The dependency of business on IT often means that issues of corporate governance cannot be resolved without consideration of IT and its management.
(Lunardi et al., 2014). This relationship is expressed more eloquently through the translation of corporate governance queries into specific IT Governance queries, as demonstrated in Table 2.4.

<table>
<thead>
<tr>
<th>Corporate governance inquiries</th>
<th>IT Governance inquiries</th>
</tr>
</thead>
<tbody>
<tr>
<td>How do suppliers of funds motivate management to give back a portion of the benefits to them?</td>
<td>How do the board and official governance get their IT and CIO firm to give back some Return On Investments (ROI) to them?</td>
</tr>
<tr>
<td>How do suppliers of money ensure that directors do not take the capital they supply or put it in un-worthwhile projects?</td>
<td>How do the board and senior managers ensure that their CIO and IT associations do not take the capital they supply or put it in un-worthwhile ventures?</td>
</tr>
<tr>
<td>How are managers controlled by suppliers of money?</td>
<td>How are the IT unit and the CIO controlled by the board and senior managers?</td>
</tr>
</tbody>
</table>

2.3.4 The Role of COBIT in Supporting IT Governance

COBIT (Control Objectives for Information and Related Technologies) is a worldwide unification system that is used to coordinate the majority of fundamental worldwide IT principles, including ITIL, CMMI and ISO 17799. It is a result of 15 years of exploration and participation among worldwide IT and business specialists (Krisanthi, Sukarsa and Bayupati, 2014; ITGI, 2007).

COBIT is positioned as a framework for enterprise governance of IT (De Haes and Van Grembergen, 2015) that improves productivity and accuracy within IT departments, helps IT departments comprehend the needs of their enterprise as a whole, and pairs best IT practices with business needs as proficiently as could reasonably be expected. This framework helps administrators to comprehend and oversee IT investments for the duration of their life cycle, and provides a system to evaluate whether IT services and new activities are meeting business prerequisites and are useful for meeting anticipated objectives (De Haes and Van Grembergen, 2015). Additionally, it helps to create and maintain effective organizational structures, procedures and instruments for effective IT management, and provides a universal database of acknowledged IT best practice that assists boards of directors, administrators and supervisors when building IT value and lessening related risks (Harmer, 2014).
2.4 The Three Dimensions of IT Governance

2.4.1 Content Perspective - Decision Domain

The Content Perspective (Decision Domain) of IT Governance is where the business and technology “intersect”; they identify the areas in which the decisions are made within the IT Governance structures (Broadbent and Kitzis, 2005). One of the questions that effective IT Governance should address is, “what decisions should be made?” (Weill and Ross, 2004). The Content Perspective (Decision domains) can be categorized in the following areas (Weill and Woodham, 2002; Broadbent and Kitzis, 2005; Weill and Ross, 2004):

*IT Maxims:* An agreed-upon set of guiding principles for IT (Wu, 2007).

*IT Architecture:* The technical options that direct the enterprise to meet the business needs; defining guidelines and combination taking into account the company’s business procedure and following so as to set these norms as best practices (Weill and Ross, 2004). Effective architecture governance reduces long-term costs of support, and enables IT to become responsive to the needs of the business. The strategic benefits that are longer-term, however, are often not in line with goals that are project-specific and/or are not responsive to realistic delivery goals. Successful groups of Enterprise Architects (EA) break the trade-off by moving from the bureaucratic stage-gates and into a toolkit that is integrated into workflows, which in turn accelerates development and design. Organizations need to charter a business architecture group, set governance processes and architecture standards, evaluate the performance of the EA group, and lastly implement the business architecture.

*IT Infrastructure Strategies:* The nature of shared services and the ways in which these services are implemented to satisfy business goals. These are empowering and shared services that are utilized by different applications (Weill and Ross, 2004), yet must incorporate a security framework (Wu, 2007) to ensure that the parts of the computing platforms are utilizing software and hardware as detection instruments, for example, encryption gadgets and firewalls.

*Business Application Need:* The required applications for business that meet operational business requirements and enforcement of institutionalization, so that the architectural honesty can be protected while discovering and fulfilling the business user’s security needs (Weill and Ross, 2004).
IT Investment and Prioritization: The answer to where, how much and when to invest is based on business priorities (ITGI, 2007). Researchers and writers have argued that IT Governance which controls the strategic effect of IT, as well as its value delivery to the business, can make all the difference. Therefore, the need to effectively manage IT resources so that they may enhance the business value of firms makes IT Governance an important issue, and yet not an easy task. In fact, the most important IT challenges faced by organizations, presently and in the future, are less related to IT than to the governance of IT (Nfuka and Rusu, 2011).

Moreover, from a practitioner’s point of view, a role-based grouping of IT Governance domains influences the decision domain. The IT Governance domains are described in terms of “five management-related issues” that concern the following IT Governance areas (ITGI 2001):

IT strategic alignment: IT alignment can be thought of as a journey rather than a destination. IT must be aligned with the business strategy, so, in other words does the IT strategy support business strategy? Alignment is progressing in towards the business strategic direction in a more aligned way than competitors (Guldentops, 2004).

IT value delivery: The value of IT is in what is perceived by the user. For effective IT value delivery, projects must be delivered on time, on budget, and within the original scope of the project (ITGI, 2003). On average, an organization’s IT delivers approximately a third of all its projects on budget, on time, and within the functionality that is required (The Standish Group, 2009; ITGI, 2007). Governance that is effective at the project-level improves the success rates of the project (Sharma et al., 2009). Strategic determinant factors include the establishment of a PMO, propelling the right project methodology level, and business end-users’ and sponsors’ over-involvement in project lifecycle specific stages (Too and Weaver, 2014). Organizations need to set up a PMO, conduct project planning, manage risk and communication, and evaluate project performance on a regular basis.

Risk management: There is a need for internal control in IT Governance, and representation of a clear picture of governance and risk management to stakeholders. Cloud technologies and the "consumerization" of IT means that there is an increased amount of information located outside a business’s firewall (Andriole, 2015), thus leading to increased risk. Governance of framework, policies and plans is important as organizations are faced with an explosion in the diversity and
number of risks. The mode in which organizations set up the function of information-risk and its mechanisms in governance assists in protecting information and technology from both external disruptions and internal misuse. Organizations need to structure information risks; create frameworks for risk assessment; design a disaster recovery plan, business continuity, and protocol in incidence response; measure the information risk value, performance, and function; and conduct effective campaigns in end-user awareness (ITGI, 2003).

*IT resource management:* IT resource management entails creating and utilizing the right IT capabilities for business requirements. IT resources can be categorized as Data, Application Systems, Technology, Facilities and People (Sallé, 2004). IT organizations and departments usually have to manage high demand projects with limited resources. The solution to this pressure is to construct a process that creates a portfolio that can generate the highest business value. The planned process should do this quickly and with minimal overhead. When the processes are too simple, it prevents the decision-makers from accessing the needed information, while too complicated may result in the stakeholders disengaging. The leading organizations in IT establish a governance portfolio that effectively balances responsiveness and rigor in an ongoing basis. Organizations need to create project proposals that are effective; establish criteria of and run the process for prioritization of portfolios; and improve the value of the portfolios (ITGI, 2007).

*Performance measurement:* “In IT, if you’re playing the game and not keeping score, you’re just practicing” (Kordel, 2004). With the use of proper monitoring and performance management approaches, IT domains that need improvement get performance feedback and can then be improved.

The Content Perspective above summarizes both academics’ and practitioners’ views on what the business IT decision areas are, and what needs to be made clear when making those decisions in an effective IT Governance arrangement. However, some areas in the Content Perspective need to be studied in more detail: for example, there is a gap in the literature regarding investigation of how senior executives prioritize their decisions in the context of IS resilience planning in an effective IT Governance environment, and the challenges individual executives and managers face in this regard (Kim, Sarkar and Wadhwa, 2016).
2.4.2 Actor Perspective - IT Governance Style

The Actor Perspective (IT Governance style) of an organization entails designating who should make and be held accountable for IT decisions, because functional, business unit or corporate managers can each make IT-related decisions (Weill and Ross, 2004). Weill and Ross (2004, 2005) argued that there are six archetypal approaches to making IT decisions, ranging from very decentralized to highly centralized types: Business Monarchy, IT Monarchy, Federal, IT Duopoly, Feudal, and Anarchy. The majority of firms apply different decision-making approaches to different types of decisions. In the most centralized approach, called Business Monarchy, all decisions related to IT are made by a group of senior business executives (Turel and Bart, 2014). Findings of the literature have highlighted how high-performing firms assign their decision rights utilizing political models (Weill and Ross, 2004).

Occasionally, the CIO is involved in the decision-making group too. In another style, decisions are made by an individual (or group of) IT executive(s), where an IT Monarchy is applied. CXOs and their operating business representatives work together with the IT team to shape a Federal decision-making archetype system. An IT duopoly is a two-party decision-making approach, where IT executives and operating business unit leaders work together. In a feudal system, decisions are made based on unit or process needs by team or process leaders respectively. And in the most decentralized approach, anarchy, all user(s) follow what they think is the right plan. The topmost IT governing body is often called the IT Governance council (Weill and Ross, 2005). IT Governance places the CIO in a position to offer leadership, and direction at the very first stage of decision-making. Both IT and non-IT professionals may provide valuable input and feedback to the IT Governance Council if one is appointed (Rau, 2004).

As discussed previously, the Actor Perspective is about identifying who makes Business-IT-related decisions and who should be accountable for what in each decision area. Each enterprise may require a different IT Governance Style according to their corporate governance strategies and based on the organizational structure (Broadbent and Kitzis, 2005). The chosen IT Governance style may also vary according to the Content Perspective. For example, if the Business-IT decision is about investing in a specific IT system or service that meets the needs of a business unit, the CIO and business unit operation manager can lead the decision-making committee in the IT Governance Style of “IT Duopoly” (Weill and Ross, 2004).
2.4.3 Process Perspective - IT Governance Mechanisms

Another question that effective IT Governance is expected to answer relates to the Process Perspective (IT Governance Mechanisms), which is how business IT decisions are made and monitored (Weill and Ross, 2004). How IT Governance decisions are made seems to be the governance domain that is the least clear based on past research (Van Grembergen and De Haes, 2017). IT Governance Forms focuses on a bi-polar centralized/decentralized decision-making structure adopted by organizations. Decisions are made in the central unit of an organization in the centralized governance structure. By contrast, in a decentralized governance structure, decision-making happens in different business units or processes (Brown and Grant, 2005). Table 2.5 presents the advantages of these two different governance structures.

Table 2.5: Summary of Centralized and Decentralized IT Governance Structures

<table>
<thead>
<tr>
<th>Structure</th>
<th>Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centralized</td>
<td>Greater control over IT standards</td>
</tr>
<tr>
<td></td>
<td>Greater opportunity for realizing general</td>
</tr>
<tr>
<td></td>
<td>economies of scale</td>
</tr>
<tr>
<td>Decentralized</td>
<td>Increase in customization of Solutions for each</td>
</tr>
<tr>
<td></td>
<td>business unit</td>
</tr>
<tr>
<td></td>
<td>Improves the overall responsiveness to</td>
</tr>
<tr>
<td></td>
<td>business unit needs</td>
</tr>
</tbody>
</table>

There is a developing body of evidence that demonstrates that IT decisions are made more centrally within an organization than was thought prior to the last decade. The most common IT administration model was thought to be a government model that included shared obligation and power between corporate units and business units (Weill, 2004).

Centralization, when practically applied, is a valuable approach as it makes standardization and efficiency easier to achieve. In the interim, the federal approach still permits business units their particular tact regarding business necessities and the adaptability they require, while offering the money-saving advantages of centralization. This “best of both worlds” approach was studied by Larsen, Pedersen and Andersen (2006), who, on review of the choices made by CIOs during expansive, multi-business unit decisions, found that IT decisions were fundamentally made with a corporate focus across over ten strategic decision ranges.
Although business units are decentralizing over time, finding centralization in decision ranges, for example, "overseeing IT operations" and "overseeing innovation resources", is not very surprising. However, Larsen, Pedersen and Andersen’s (2006) finding of centralized power in generally decentralized or shared decision areas, for example, "overseeing IT tasks", "overseeing IT interest/utilization", "characterizing/organizing IT anticipates", and particularly, "overseeing/enhancing business procedures", is an astonishing result. Furthermore, CIOs reported that these same decisions would turn out to be considerably more centralized later in the decision-making and implementation processes (Larsen, Pedersen and Andersen, 2006). This dramatic movement toward centralized IT Governance, combined with a significantly more grounded sign of a foreseen pattern, has driven researchers to investigate what may have spurred this general shift in IT decision-making patterns (Larsen, Pedersen and Andersen, 2006; Adams Larson and Xia, 2008).

Evaluation of the literature shows that no single governance paradigm gives a one-size-fits-all example for security decision-making. In addition to this, IT security and consequently risk administration influence the entire IT infrastructure (Wu, 2007).

From the perspective of strategic alignment, effective IT Governance calls for a significant amount of attention and management time. Table 2.6 shows the structure of committees that make decisions related to IT Governance (Weill and Ross, 2004).
Table 2.6: Sample of IT committee structures governing the enterprise (Weill and Ross, 2004)

<table>
<thead>
<tr>
<th>Example of members</th>
<th>IT Steering Committee</th>
<th>IT Governance Committee</th>
<th>Standards Committee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governed by Executives and Senior Managers. The CIO is a member</td>
<td>Chaired by CIO</td>
<td>Run by top architects who are accountable to the CIO and Governance committees’ members (Weill and Ross, 2004)</td>
<td></td>
</tr>
<tr>
<td>Approval of decisions about key investments</td>
<td>Mandate enforcement of decisions by steering committee related to designs</td>
<td>Introduce new standards and determine if the specific standards are obsolete</td>
<td></td>
</tr>
<tr>
<td>Ensures cost, reliability, effectiveness, easy access, and consistent customer service</td>
<td>Enforces management and implementation of IT architecture; Standard enforcement of architecture but allowing flexibility; High-ranking IT leaders are members</td>
<td>Decisions are referred to governance committee</td>
<td></td>
</tr>
</tbody>
</table>

2.5 IT Governance Effectiveness

Effective IT Governance helps enterprises to deliver better quality results on IT investments (Wu, Straub and Liang, 2015). What decisions should be made, who should make them and how they will be made must be answered by effective IT Governance.

In addition, IT Governance effectiveness does not occur by chance (Weill and Ross, 2004). Rather, a thorough analysis is needed in at least four important domains of IT Governance, which were presented above: IT Maxims (principles), IT Infrastructure Strategies, IT Architecture, and IT Investment and Prioritization (Weill and Woodham, 2002). IT Governance is carefully designed in top-performing enterprises, and managers at different levels of the enterprise apply their own judgements when implementing that design.
2.5.1 Necessity of Clear Definition

Considering the three dimensional framework of IT Governance that concerns Content-Actor-Process (What-Who-How) presented above, there are few definitions of IT Governance effectiveness in the literature addressing all three dimensions. The exception to this assertion is Korac-Kakabadse and Kakabadse (2001), who provided an explanation of IT Governance effectiveness that has considerable overlap with all three dimensions of the IT Governance framework. They asserted that effective IT Governance should provide structures and mechanisms that allow IT managers and suppliers to assemble business–IT integrated plans, assign responsibilities and accountabilities, define IT priorities, consider business needs, and measure and monitor their performance. In other words, effective IT Governance is described as a set of governance arrangements that i) guarantees that IT supports business objectives, ii) makes the best use of investments made in IT, and iii) evaluates IT-related risks and opportunities properly (Korac-Kakabadse and Kakabadse, 2001).

Having applied the three dimensional framework of IT Governance presented previously (Content-Actor-Process) to the statement above, effective IT Governance can be defined as structures and mechanisms that allow IT managers and suppliers to consider business needs and define IT priorities (Content Perspective: IT Governance Domain); assign responsibilities and accountabilities (Actor Perspective: IT Governance Style); and assemble business–IT integrated plans and measure and monitor their performance (Process Perspective: IT Governance Mechanism).

Although it would appear that effective IT Governance addresses all three dimensions of the IT Governance framework, the definition presented by Korac-Kakabadse and Kakabadse (2001) has potential to be improved further. For example, just “considering” business needs as opposed to prioritizing them does not account for how important IT Governance is to an enterprise as a whole. Thus, the need for a clearer definition of “Effective IT Governance” that applies to the present climate of IT operations is apparent. Furthermore, the many respected authors who have claimed several benefits of effective IT Governance (discussed in detail next) have not provided a clear definition of what constitutes “effectiveness” in this context. Authors have also tried to give some explanation for how and why those claimed benefits are achieved in organizations through implementing effective IT Governance. However, as both the claimed
benefits and the why/how explanations are contingent upon what “effective IT Governance” means, the need for a clear definition of “effective IT Governance” is obvious. To demonstrate the importance of this knowledge gap, the how and why of the claimed benefits of IT Governance effectiveness, as described in the existing literature, are outlined below.

2.5.2 Characteristics of Effectiveness

IT Governance suffers when the critical pillars are missing or weak (Van Grembergen and De Haes, 2017). It is observed from the literature that successful organizations in IT Governance generally possess six distinctive characteristics, which include:

- Possessing business strategies that are strongly defined, including innovative service and product delivery, management of customer relationships, and operational excellence (Alreemy et al., 2016)
- Ensuring that the organization’s focus is on specific objectives for creation and maintenance of investments in IT as part of a wider plan in IT Governance
- Ensuring consistent and high-level executive IT Governance management participation and the creation of solutions in IT Governance (Charani et al., 2014)
- The processes and solutions in IT Governance are critical in ensuring the success of the business, and numerous, frequent changes complicate the process and make it difficult for organizational executives to understand the manner in which IT Governance operates
- Ensuring that the organization is capable of implementing changes in IT compliance processes and strategies, to support desirable behaviors (Orozco, Tarhini and Tarhini, 2015).
- Ensuring that there are methods of formal communication established prior to problematic situations arising, and which are monitored for efficiency and effectiveness. These mechanisms and methods reinforce IT Governance as being critical to both technology and business outcomes for the organization (De Haes and Van Grembergen, 2015).
2.5.3 Definition of IT Governance Effectiveness

The model shown in Figure 2.1 depicts the knowledge claim by Weill and Woodham (2002) and others mentioned above. The arrow indicates causality in a variance model. This research explores the link by reviewing and synthesizing the literature. To explore the model, this research defines effective IT Governance arrangements as the soundness of business IT decisions with respect to each of the three dimensions of IT Governance (Content-Actor-Process). Definitions of what “soundness” means for each of these three dimensions are presented in Table 2.7. In the language of structural equation modelling, these are three indicators of effective IT Governance.

Table 2.7: Definitions of the soundness of decisions in the three dimensions of IT Governance

<table>
<thead>
<tr>
<th>IT-Governance Dimension</th>
<th>Definition of Soundness for this Dimension of IT Governance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content Perspective (Decision Domain)</td>
<td>Organizational arrangements for the definition of IT maxims, development of IT-architecture standards, and development of IT-infrastructure strategies, choices of business applications, and IT investment and prioritization are well defined, agreed, widely understood, and widely approved of.</td>
</tr>
<tr>
<td>Actor Perspective (IT Governance Style)</td>
<td>Key players in the organization understand and agree on which levels, roles, and parts of the organization have and should have input into IT investment decisions, and which levels, roles, and parts of the organization get to make and should get to make IT-investment decisions.</td>
</tr>
<tr>
<td>Process Perspective (IT Governance Mechanisms)</td>
<td>The mechanisms (i.e., the ways and means) for making decisions, e.g., through formal standing committees or informal discussions with colleagues, are well defined, agreed, widely understood, and widely approved of.</td>
</tr>
</tbody>
</table>
2.6 Business Benefits of Effective IT Governance

The claimed benefits of effective IT Governance were mentioned widely among the 54 studies selected for this literature review. The most common benefits are (summarized in column 1 of Table 2.8): 1) strategic alignment between IT and enterprise objectives (the most agreed upon benefit), 2) protecting the enterprise's investment in IT, 3) taking advantage of current business opportunities, and 4) avoiding potential business threats. Moreover, better value delivery, improved return on IT investments, improved transparency, and improved accountability were also more highlighted in the literature.

In addition, although many studies pointed out benefits of effective IT Governance, few explained how these benefits were achieved, or provided enough empirical evidence to support their claims. Of the 54 publications, Guldentops (2004), Weill and Ross (2004), Broadbent and Kitzis (2005), and the ISACA-backed NCC (2005) included the most detailed discussions of the benefits of effective IT Governance. The key benefits mentioned in these four studies are summarized in Table 2.8; however, the benefit categories listed in column 1 relate to the most common benefits reported in all 54 publications, not just the four highlighted.

When seeking to understand the benefits of effective IT Governance outside of academia, ISACA (Information Systems Audit and Control Association) is one of the most influential professional institutes that identify the best practices concerning Information Systems. ISACA formed the ITGI (IT Governance Institute - UK) to concentrate on fundamental research, publications and resources in IT Governance. The benefits of effective IT Governance in the last column of Table 2.8 were listed in one of ISACA's available publications (published by the National Computing Centre).

It should be noted here that there is a restriction on the above conclusion. Given the lack of empirical evidence, the measure of potential validity used here was the number of times a particular benefit of IT Governance was claimed. Accordingly, it is possible that less frequently cited benefits that are also valid might have been missed. Also, owing to the insufficient explanation as to how and why IT Governance produces these benefits, it is possible that some of these repeatedly cited benefits have been credited to IT Governance directly which could be benefits of desirable behavior in the use of IT. It is explained in this study that desirable behavior in the use of IT is an outcome of effective IT Governance.
Table 2.8: Summary of the benefits of effective IT Governance

<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Strategic alignment between IT and enterprise objectives</td>
<td>Aligns IT with the business</td>
<td>Better IT value learning</td>
<td>Synchronizes IT strategy with business strategy</td>
<td>Enables external compliance</td>
</tr>
<tr>
<td>Protecting the enterprise's investment in IT</td>
<td>Protects shareholder value; Directs and controls IT investment</td>
<td>Better focused IT spending on strategic priorities; More than 20 percent higher ROA from IT</td>
<td>Encourages desirable behavior in the use of IT</td>
<td>Improved ROI/stakeholder value; Performance improvement</td>
</tr>
<tr>
<td>Taking advantage of current business opportunities</td>
<td>Drives business opportunities and benefits; Sustains current operations and prepares for the future</td>
<td>Implementation of new information technologies that bombard enterprises with new business opportunities</td>
<td>Better delivery</td>
<td>Provides opportunities and facilitates partnerships</td>
</tr>
<tr>
<td>Avoiding potential business threats</td>
<td>Manages IT risks clearly</td>
<td>Allocates IT decision-making to those in charge of outcomes; Involves the right people in the IT decision-making process; Clear and transparent decision-making process</td>
<td>Builds trust</td>
<td>Improved transparency and clarified accountability</td>
</tr>
</tbody>
</table>
IT Governance expectations and reality often do not match. Boards expect management to cope with many responsibilities, such as delivering quality IT projects on time and on budget, utilizing IT to return business value, and controlling IT to boost efficiency and productivity while mitigating IT risks. However, business losses, smashed reputations, damaged competitive positions, and over time, over budget, lower-than-expected quality and failures of IT initiatives to deliver agreed on benefits are seen frequently by boards (Guldentops, 2004).

A number of studies have already been published that seek to identify the success determinants of IT Governance. Harnessing IT power has been a practice and research focus for several years, yet statistics indicate that a number of organizations have not yet fully realized the value of IT investment (Wilkin and Campbell, 2010). While numerous standards and frameworks have been published to assist organizations seeking to achieve IT investment value, research is scarce that demonstrates new or innovative frameworks that differ greatly from those published in the early-mid 2000’s (Selig, 2015; Satidularn, Tanner and Wilkin, 2011). A result of a case study investigation into large and complex organizations in North America and Europe, Ribbers, Peterson and Parker (2002) concluded that effective IT Governance is normally influenced by the strategic integration of business and IT decisions. Additionally, they determined that collaborative relationships and a common understanding among stakeholders also impact effective IT Governance (Ribbers, Peterson and Parker, 2002). Effective IT Governance fundamentally focuses on the establishment of appropriate IT structures and processes and aligning business and IT strategy as well as operations (Guldentops, 2004).

*Strategic alignment between IT and enterprise objectives* is the most agreed-upon benefit of effective IT Governance. Good IT Governance synchronizes IT strategy with business strategy (Broadbent and Kitzis, 2005) and enables external compliance (NCC, 2005). It expands the board’s mission of identifying strategic direction and ensures that objectives are met, risks are mitigated and resources are managed correctly. A critical dependency on IT has been created by the invasive use of technology, thus necessitating an explicit focus on IT Governance. Such governance should guarantee that an enterprise’s IT upholds its business objectives. Effective IT Governance aligns IT with the business, while accepting IT as a critical input to and component of the strategic plan, influencing strategic opportunities (Guldentops, 2004). Also, effective IT
Governance better focuses IT spending on strategic priorities, because IT is expensive. Moreover, it is critical to organizational understanding of IT value (Weill and Ross, 2004).

*Protecting the enterprise's investment in IT* is another claimed benefit of effective IT Governance. Having studied more than 250 firms, researchers argue that successful IT Governance is needed for better IT decision-making. Good IT Governance pays off, as the firms with above average IT Governance performance had more than 20 percent higher return on assets (ROA) (Weill and Ross, 2004). Effective IT Governance protects shareholder value, and directs and controls IT investment (Guldentops, 2004). This encourages desirable behaviors in the use of IT (Broadbent and Kitzis, 2005) and improves Return on Investment/stakeholder value, providing opportunities and facilitating partnerships that eventually improve performance (NCC, 2005).

The next common benefit of effective IT Governance is *taking advantage of current business opportunities*. With effective IT Governance, foresight is more likely, which enables implementation of new information technologies that bombard enterprises with new business opportunities (Weill and Ross, 2004). Effective IT Governance also directs and controls IT investment, opportunity, benefits and risks; sustains current operations, and prepares for the future as an integral part of a global governance structure (Guldentops, 2004) which results in better delivery (Broadbent and Kitzis, 2005).

*Avoiding potential business threats* is another common benefit of effective IT Governance that is mentioned in the literature. From a CIO’s perspective, enterprises need a strong system of IT Governance, because good IT Governance helps enterprises to make better and faster IT-related decisions, and it also builds trust (Broadbent and Kitzis, 2005) and avoids potential business threats. Effective IT Governance makes clear that IT risks are quantified and understood (Guldentops, 2004), and allocates IT decision-making to those in charge of outcomes, because it is not possible or desirable in many firms to manage IT centrally (IT is pervasive). Also, effective IT Governance directs the right people to the appropriate IT decision-making processes (as IT value depends on more than good technology), and it provides clear and transparent decision-making processes that facilitate the best use of senior management’s limited bandwidth (Weill and Ross, 2004). Effective IT Governance clearly improves transparency and clarified accountability (NCC, 2005).
Other than the most common benefits of effective IT Governance discussed above, several other benefits are scattered throughout the literature as well. For example, other authors have also examined factors that affect the efficacy of IT Governance (Ali and Green, 2005; Weill, 2004). When evaluating or implementing IT Governance, managers consider eight aspects, such as transparency of IT decisions, the simplicity of governance alignments and whether or not the incentive and reward systems are incorrectly aligned (Weill, 2004). This information was obtained by undertaking surveys of chief information officers and conducting case studies of big multinational companies. Noticeable positive relationships were found after analyzing survey data obtained from members of ISACA (Information Systems and Audit Association Australia). These relationships existed between the effectiveness of IT Governance and the four mechanisms of IT Governance: namely, the IT strategy committee, senior management involvement, the culture of compliance, and the corporate communication systems. With the help of sample data from auditors working in Australian public sector organizations, it was again confirmed that corporate communication systems and the IT strategy committee are indeed important aspects of effective IT Governance (Ali and Green, 2005).

Through an in-depth study of an Australian organization, researchers explored the influences of IT Governance structures, processes, and result metrics (Bowen, Cheung and Rohde, 2007). Their findings revealed that more efficient IT Governance performance outcomes are usually associated with a shared understanding of the IT and business objectives, the active involvement of the IT steering committee, a balance between business and IT representatives in IT decisions, and comprehensive, well-communicated IT policies and strategies. Moreover, insights into effective and easy implementation of IT Governance practices are suggested, as is a minimum baseline of activities that all firms should have: IT leadership and strategic IS planning (Van Grembergen and De Haes, 2008). While adopting an inductive research strategy to study qualitative data, evidence was found that the IT steering committee and IT-related communication policies have an influence on the effectiveness of IT Governance (Huang et al., 2010).
On the other hand, a set of important aspects of effective IT Governance was identified within public sector organizations in Tanzania. These included the governance of IT structures, the involvement of stakeholders, definition and monitoring of benefits, and well-communicated IT strategies and policies (Nfuka and Rusu, 2010). Further, in a follow-up study, Nfuka and Rusu investigated and confirmed the positive impact of the factors identified previously in IT Governance performance, using survey data collected from 51 organizations (2010). Contrary to the forecasted studies that seek to identify success in effective IT Governance, an empirical study examined the manner in which the inhibiting features associated with IT Governance can affect its success. The absence of clear IT principles and policies, and inadequate support from financial resources, emerged as some of the inhibiting factors (Lee and Lee, 2008).

IT Governance solutions help companies to ensure that the right people have responsibility for strategic decisions within the business and that there is sufficient input from others who have relevant knowledge or skills to move the business forward.

Further, organizations should be involved in the implementation of an IT Governance plan, monitoring this implementation on an annual basis while making as few changes as possible. Stability in IT Governance processes and solutions is critical to ensuring the success of a business. Hence, numerous changes make it more difficult for organizational executives to understand the mode of operation of IT Governance and the role that IT compliance can play in assisting the organization to perform optimally. IT Governance plans also ensure that the organization is able to implement changes in IT compliance processes and strategies, to support desirable behaviors while eradicating undesirable behaviors, especially when things do not go well. Organizations ensure that methods of formal communication are established from the outset and are monitored to ensure their efficiency and effectiveness. Finally, organizations that perform well in the management of IT Governance have formal mechanisms and methods of communication in place as part of their plan of IT Governance.

Along these lines, the strategic advantages of actualizing an IT Governance model include the following: strategic alignment; expansion with business partners; enhanced task prioritization, prompting a lessening of the IT spending plan by 8% to 10%; improved performance and asset governance; and better quality of IT yield, bringing about a decrease in IT control issues by half (Turel and Bart, 2014).
In summary, organizations with successful IT Governance performance generally possess distinctive characteristics, such as strongly defined business strategies including customer relationship management, innovative product and service delivery, and a commitment to operational excellence. These characteristics all link back to IT compliance, to ensure that future business strategy and operations run effectively and efficiently. They also ensure that the company focuses on specific objectives for making and maintaining IT investments as part of a wider IT Governance plan; these include improving product quality, reducing time-to-market for product development, and improving employee collaboration and participation. These organizations ensure high-level and consistent executive participation in IT Governance management and the creation of IT Governance solutions, as evidence shows that companies that have higher executive participation in IT Governance management also have the most consistent attainment of corporate goals and targets.

2.7 Challenges of IT Governance

It is essential to understand the various challenges faced by IT Governance in accomplishing objectives effectively. Much has been said about the significance of actualizing the right IT Governance strategy, and firms do spend large sums of money with this in mind, but IT Governance executions do still fail on occasion, and this leads to unacceptable results for the stakeholders (Krigsman, 2010).

The definitional challenged of IT Governance are discussed in 2.3. The outcomes and benefits of IT Governance are contingent on how it is defined to the actors in charge so a more clear and comprehensive definition supported by a narrower framework might result in a more satisfied result. The literature on IT Governance can be difficult to clearly understand, as different authors have used various definitions of IT Governance, and the different claims they make about are therefore contingent upon those definitions.

IT Governance challenges, and the resources or capabilities required to meet those challenges, have been discussed explicitly. Two sets of challenges have been identified, which are control and stakeholder (Korac-Kakabadse and Kakabadse, 2001). Peterson (2001 and 2004) argued that governance is supposed to handle challenges in IT in three ways: namely, process, structural and relational. The structural approach is focused on strategic alignment, as described by Weill and Ross (2004), and is the fundamental relationship between the IT function and the
rest of the company. While the majority of pundits agree that IT is used in organizations to further strategic goals, a disagreement exists about how to make that happen and how to determine that alignment has been achieved. This set of problems relating to adjustment is a relatively recent concern for many organizations. As organizations have moved from business process automation to information-based strategic management, the potential for its impact on organizational activities has increased (Ward and Elvin, 1999).

In this regard, as a solution to corporate IT challenges, governance of IT is in itself very problematic. At numerous levels, several approaches involving different management philosophies have given rise to confusion. This has made it difficult to translate IT Governance, as a means of implementing protection of the owner’s property, into actual IT practice in the hands of technical users and experts. In most organizations, one of the difficulties in meeting IT Governance challenges is most likely found in the fundamental theory underpinning how and why effective IT Governance contributes to delivery of business value in practice. The attempt of having a broad definition IT Governance, may lead to ultimate challenges like a broad mission and objective.

2.8 Research Gaps, Objectives and Questions of the Research

This section summarizes the research gaps within the extant IT Governance (ITG) literature, and delineates the objective and the questions underpinning this research.

The first knowledge gap motivating this research emanates from the insufficiency and inadequacy of the theory explaining how and why effective IT Governance leads to business value at the organizational level. A synthesis of the literature indicated that while prior research claimed a number of benefits associated with effective IT Governance for organizations (Guldentops, 2004; Weill and Ross, 2004; Broadbent and Kitzis, 2005; NCC, 2005; Rahimi, Møller and Hvam, 2014), these studies do not provide a comprehensive explanation of the causal relationship of how and why effective IT Governance leads to business value from IT investments. Therefore, it is imperative that future research should explore the actual mechanisms through which IT Governance contributes to delivering business value from IT investments (Rahimi, Møller and Hvam, 2014), and how IT investments could be legitimimized (Gordon, 2012). So, precisely, the empirical validation needs to be addressed in a more comprehensive way. Another important aspect that has not been given much attention in
previous studies, but which is relatively integral to understanding the criteria with which IT Governance should be implemented in an organization, is to explore what constitutes IT Governance effectiveness (Brown, 2015). This implies the need to explore, firstly, *what* the IT Governance decisions are about (Content Perspective); secondly, *who* makes IT Governance decisions and *who* is accountable (Actor Perspective); and thirdly, *how* IT Governance decisions are made (Process Perspective). Therefore, it is important to undertake a comprehensive assessment of IT Governance research across all three dimensions.

The *second* knowledge gap motivating this research emanates from the insufficiency and inadequacy of the theory explaining the actual IT Governance *practices* performed by *individuals*. Buchwald, Urbach and Ahlemann (2014) as well as Drnevich and Croson (2013) demonstrated that a general lack of theoretical understanding exists related to the mechanisms and practices actors use to translate IT Governance decisions into business value. In addition, it is unclear how decision makers in organizations adopt IT Governance practices (Brown, 2015), or which IT Governance practices are most suitable and appropriate to generate business value, as perceived by those involved in IT Governance processes (Webb, Pollard and Ridley, 2006). Indeed, Webb, Pollard and Ridley (2006) highlighted that the identification of IT Governance practices is vital element to provide organizations with managerial guidelines on how to achieve business value from IT Governance. However, researcher to date has failed to describe in detail the various mechanisms underpinning IT Governance, and hence this gap in knowledge should be addressed (Kim, Sarkar and Wadhwa, 2016; Sesay and Ramirez, 2016). Doing so would also help to address the incongruities in the extant literature (De Haes and Van Grembergen 2005; Weill 2004).

The *third* knowledge gap motivating this research emanates from the lack of empirical evidence that describes IT Governance practices and procedures used by individuals in organizations. It is evident that significant gaps exist: namely, theory-practice gaps (Buchwald, Urbach and Ahlemann, 2014), which are defined as a disconnection between the available literature on IT and the various multiple actors in IT, otherwise known as practitioners (Brown, 2015). However, it is important to note that the existence of these gaps does not suggest that practitioners necessarily lack knowledge in this area (Lee and Lee, 2009). Instead, it implies that the majority of IT Governance models and recommendations (i.e., the COBIT framework) have
not been developed through comprehensive and peer-reviewed empirical research. In addition, definitions of key terms and practices, including the meaning of IT Governance, can also be considered insufficient (Brown, 2015). Table 2.9 summarizes the research gaps identified in the literature, and outlines how these gaps inform this research.

Table 2.9: Research Gaps and Implications for Effective IT Governance

<table>
<thead>
<tr>
<th>Research Gap and Implication</th>
<th>Description</th>
<th>Authors</th>
</tr>
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<tbody>
<tr>
<td>Research Gaps</td>
<td>Insufficient and inadequate theory explaining how and why effective IT Governance leads to business value at the <em>organizational</em> level.</td>
<td>Brown, 2015; Buchwald, Urbach and Ahlemann, 2014</td>
</tr>
<tr>
<td></td>
<td>Insufficient and inadequate theory explaining the actual IT Governance practices performed by <em>individuals</em>.</td>
<td>Rahimi, Møller and Hvam, 2014; Turel and Bart, 2014; Gordon, 2012; Novotny, 2012; Kim, Sarkar and Wadhwa, 2016; Sesay and Ramirez, 2016</td>
</tr>
<tr>
<td></td>
<td>Lack of empirical evidence that describes IT Governance practices and procedures used by individuals in organizations.</td>
<td>Wu et al., 2015, Gordon, 2012</td>
</tr>
<tr>
<td>Resulting Research Implications</td>
<td>Conduct conceptual study exploring the pathways through which effective IT Governance contributes to business value through the content, actor, process perspectives</td>
<td>Drnevich and Croson, 2013; Gordon, 2012; Novotny, 2012; Sesay and Ramirez, 2016</td>
</tr>
<tr>
<td></td>
<td>Conduct phenomenological study on IT Governance practices from the perspective of individuals (senior executives and managers)</td>
<td>Turel and Bart, 2014, Gordon, 2012</td>
</tr>
<tr>
<td></td>
<td>Conduct phenomenological study that describes the practices and procedural stages of IT Governance from the perspective of actors involved in these processes</td>
<td>Gordon, 2012; Kim, Sarkar and Wadhwa, 2016</td>
</tr>
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</table>

In light of these gaps in knowledge, the main objective of this research is to investigate how and why effective IT Governance contributes to delivering business value from IT investments.
Specifically, this research adopts an organizational and an individual actor perspective, thus addressing the aforementioned gaps in the Information Systems research literature outlined by Buchwald, Urbach and Ahlemann (2014), and Drnevich and Croson (2013). As recommended by Miles and Huberman (1994), the research objective will be addressed through the following specific research questions:

Research Question 1:

How and why do organizations generate business value from IT investments through IT Governance?

Research Question 2:

How and why do individual actors engage in IT Governance practices, and how do they thereby generate business value from IT investments?

2.9 Chapter Summary

In response to the uncertainty about definitions of IT Governance, the contingency of IT Governance effectiveness, and its claimed benefits in relation to the definition of IT Governance, a multi-dimensional framework was suggested. This framework offers a potential pathway for a) identifying common ground in different definitions of IT Governance, and b) providing greater insight into the meaning of ‘effective IT Governance’. The framework entails three dimensions: (i) Content Perspective-Decision Domain, (ii) Actor Perspective-IT Governance Style, and (iii) Process Perspective-IT Governance Mechanisms. A comprehensive analysis of the literature revealed that these three key dimensions of IT Governance have been widely discussed in the literature. Based on this new understanding, a novel definition of IT Governance was provided which covers all three dimensions of the above framework.

Having discussed each of the dimensions of IT Governance, the grounds on which to define IT Governance effectiveness were established. Thus, the need for providing a clearer definition of IT Governance effectiveness was determined. Since both the claimed benefits of effective IT Governance and the reasoning of how and why they are achieved are contingent upon the definition of effective IT Governance, secondly, “Effective IT Governance”
arrangements will be systematically defined as the soundness of business IT decisions with respect to each of the three dimensions of IT Governance.

According to the literature, the most common benefits of effective IT Governance are identified as 1) strategic alignment between IT and enterprise objectives, 2) protecting the enterprise's investment in IT, 3) taking advantage of current business opportunities, and 4) avoiding potential business threats. Finally, by synthesizing what is currently known in the literature, this chapter establishes that there is a strong need for an explanatory model to explain the how and why of the mechanisms through which effective IT Governance leads to greater organizational benefits from both enterprise level and individual perspective. The model needs to explain the pathways from Effective IT Governance to Business Value.
3 RESEARCH METHODOLOGY

3.1 Chapter Introduction

This chapter details the methodology of the present research by describing the researcher’s investigation of it, and how and why effective IT Governance contributes to delivering business value from IT investments. Specifically, it explains and justifies the qualitative approach used in this research. The research methodology allows the researcher to understand the relevant facets of IT Governance from the perspectives of those who have participated in IT Governance.

This chapter is structured to explain and justify the manner in which the research was approached. As presented in Figure 3.1 below, the chapter begins by providing an overall justification of why the qualitative research used a sequential design in which a conceptual study was undertaken first, followed by a phenomenological study. Thereafter, the conceptual study and the phenomenological studies are explained and justified in detail. Within the description of each study’s approach, the research method is defined, its strengths and weaknesses are summarized, and an overview of its application in Information Systems research is provided, with specific reference to its applicability in this research.
Figure 3.1: Structure of Chapter 3 – Research Methodology
3.2 Overview and Justification of Research Approach

A qualitative research was undertaken. The qualitative method facilitates the understanding of an issue or problem particularly from the perspectives of the immediate population that is immersed in the subject matter (Swanson and Chermack, 2013). Therefore, qualitative research seeks to unearth information related to specific segments of the population regarding their behaviors, opinions and values within their social contexts, which can be used to determine laws that can facilitate predictions of future outcomes (O'Leary, 2017). However, the robustness of qualitative research emanates from its exploration of experiences that have not been explained previously. In addition, the qualitative research endeavors to offer complex textural descriptions rather than numerical ones, that pertain to the experience of people who are immersed in a given issue under research (Taylor, Bogdan and DeVault, 2015). In other words, the information obtained from the qualitative research humanizes the research issue, which is often underpinned by contradictions of emotions, opinions, beliefs, behaviors and relationships. In this case, the issue forming the subject matter of the research is the perceptions of people regarding IT Governance and its impact on the outcomes of organizations. Undertaking such a research using a qualitative approach unearths unique and peculiar opinions, beliefs, and behaviors that are exhibited by people as they interact with Information Systems in their organizations, and how such interactions are guided by corporate governance principles (Galliers, 1991; Shanks, Arnott and Rouse, 1993).

The qualitative research employed a two-study design in which both studies complementary to each other. First, a conceptual study was used to provide a perspective of how and why effective IT Governance leads to business value from the lens of the organizational level. This approach applies existing theories, constructs and concepts found in the literature to develop new links that facilitate an understanding of the issue under investigation (Rocco and Plakhotnik, 2009).

Second, a phenomenological study was undertaken to provide an actor/individual perspective of the decision-making processes involved in IT Governance. This method is preferred over other qualitative approaches because of the richness of understanding about an experience or situation (Shanks, Arnott and Rouse, 1993) that it provides. This is because of its
focus on the human aspects that influence the effectiveness of a theoretical framework, such as perceptions, attitudes, and beliefs (Cilesiz, 2011).

The conduct of a research requires an understanding of the research methodology to be used and a justification of the chosen approach over other methodologies (Silverman, 2013). This section presents and explains the research methodologies used and justifies their choices. The research methodologies employed in this research include the conceptual study and the phenomenological study.

3.2.1 Conceptual Study

3.2.1.1 Overview of Research Method

According to Shanks, Arnott and Rouse (1993), a conceptual study is an articulation of subjective beliefs related to an area of investigation. Based on this premise, a conceptual study is an interrogation of the theories and underlying concepts, beliefs, assumptions, and expectations that facilitate the process of knowing and understanding a real event. This kind of study helps to break down an overarching concept into various components, which in turn help to unify the concepts and determine their interconnectedness. Therefore, a conceptual framework method is applied as a tool for theoretical modelling (Galliers, 1991). The tool utilizes existing relevant literature to develop a model in which already established concepts and constructs are rearranged to make an implicit idea become explicit. Usually, conceptual studies are visualized using diagrams of conceptual maps and matrix tables, which are employed to illustrate the interrelationships between the concepts and constructs (Goldkuhl, 2012). According to Orlowska (2013), theory modelling is a procedural and logical undertaking that underpins the development of conceptual frameworks employed in a conceptual study or inquiry. In the process of modelling a theory, known concepts and constructs are subjected to abstractions in which different interpretations are deduced and constructed to fit into a new phenomenon, with the aim of enhancing its understanding (Orlowska, 2013). Once a conceptual model has been developed, it can then be used to simulate other phenomena that would employ similar concepts or even generalize occurrences of other phenomena (Orlowska, 2013). In this case, a conceptual study developed new conceptual models that could be used to explain occurrences in an information system. As such, conceptual models form the basis of development of system designs that can explain outcomes of an information system (Goldkuhl, 2012). In addition, in the conceptual
study, constraints in the conceptual integrity of the model developed are exposed and addressed to eliminate the incompatible concepts and constructs or their linkages.

The advantage of a conceptual study is its ability to clarify the foundations and bases of concepts, and to consolidate various perceptions and concepts to provide a bigger picture to the research problem and thus facilitate its study. To this end, the conceptual study clarifies any ambiguous terms and ensures that conflicting interpretation of the terms, concepts and constructs does not occur. As such, a conceptual study serves as a prerequisite for other detailed qualitative studies that may be undertaken to answer a research problem more precisely (Goldkuhl, 2012). In addition, the conceptual study helps the researcher to understand the approach to theory formulation, by facilitating the manner in which different variables and the concepts underpinning them are linked (Flottorp et al., 2013). Moreover, the conceptual study can develop conceptual models that can be implemented physically and therefore be used to design actual systems that have practical application in an organization. Particularly, the conceptual model that has been developed in a conceptual study can be mapped onto a physical design of a coherent platform that can either be used manually or can be automated (Ngai, Tao and Moon, 2015).

However, the conceptual study methodology is challenged by various disadvantages. The methodology is time-consuming and therefore not suitable for researches that have limited time. Franco-Santos, Lucianetti and Bourne (2012) observed that the conceptualization process in the undertaking of a conceptual study requires the researcher to be well versed with the existing concepts and constructs in various disciplines related to the study problem or question, considering that many such concepts and constructs are applicable across a variety of disciplines. As such, engagement in an extensive search of relevant literature may discourage application of the methodology. In addition, faulty logic can nullify the applicability of the conceptual model developed. As such, the methodology requires sound deployment of logic, and any other researcher presented with the same circumstances should be able to replicate the logical sequences of reasoning used.
A conceptual study works by using established concepts and constructs, and logical reasoning to construct new relationships that can be used to explain novel phenomena. Following logical steps when formulating concept maps enables the development of conceptual clarity in the manner in which a phenomenon occurs and the causes of the outcomes observed (De Haes, Van Grembergen and Debreceny, 2013). The conceptual study of this research takes a personalized approach that provides the researcher’s own position on IT Governance, its effectiveness and the business value of effective IT Governance. The conceptual study also offers a vivid direction for the whole research. It is a slightly adapted version of other successful models used previously, and has modifications that would suit the effective IT Governance and the research descriptions and analysis of its effectiveness (De Haes, Van Grembergen and Debreceny, 2013).

Conceptual studies within the field of IT Governance are relatively uncommon, as IT Governance researchers tend to first gather empirical evidence before developing conceptual models. The conceptual studies that do exist in this field serve as a means to develop IT Governance models that can later be used in conjunction with traditional qualitative data collection methods. Such is the case with Wu, Straub and Liang’s (2015) study that began with a resource-based conceptual model, which was developed by the researchers to address the mediating effects of strategic alignment on the relationship between organizational performance and IT Governance effectiveness.

Conceptual studies are increasingly employed in research and in various Information Systems studies, such as cloud computing (Martini and Choo, 2012), knowledge management (Alhawari, et al., 2012), and project governance (Too and Weaver, 2014), among many others. Martini and Choo (2012) undertook a conceptual inquiry into how forensic and law enforcement agencies can leverage cloud computing to enhance their investigations and improve the outcomes of such investigations. In addition, Alhawari and colleagues (2012) constructed a customized knowledge-based risk management framework (KBRM) for IT projects, so as to enhance the process efficiency in planning for risk responses in such projects. Too and Weaver (2014) delved into a conceptual framework that would improve the effectiveness of project governance, such that the management of such projects may be optimized.
3.2.1.2 Application and Research Design

This conceptual study aims to facilitate better understanding of the benefits of IT Governance, and results in a new, exploratory model that aims to answer this question. The papers for the conceptual study were obtained from the relevant literature. Online sources were used to access relevant, current and reliable literature that contained publications of various concepts and constructs associated with Information Systems and IT Governance. Use of reliable search engines, such as Google Scholar and Microsoft Academic Search, was necessary to obtain publications of the required standard. In turn, reliable databases, such as ProQuest and ERIC, were queried for peer-reviewed articles using key words such as information system governance, IT Governance, technology and governance, and other similar phrases.

The conceptual study for this research followed a sequential build-up of a conceptual model that was used to guide the phenomenological study thereafter. The conceptual study sought to identify the conceptual links between effective IT Governance and business value, and to explain why the two are linked. As such, the conceptual study was premised on providing an answer as to how and why effective IT Governance resulted in business value being accrued from the application of IT. The quest for insights into ‘how and why’ instigated a literature search, which sought to identify and define the constructs that underpin effective IT Governance and business value and the different formulations upon which the two have been linked previously by others. The literature search first aimed at identifying the existing concepts related to effective IT Governance and business value. This required a breakdown of ‘effective IT Governance’ and ‘business value’ into underlying concepts, which could be defined unambiguously and employed in the phenomenological study’s conceptual model (Venkatesh, Brown and Bala, 2013). Gregor (2006) cautions that care should be taken to obtain as many concepts as possible from a variety of disciplines in which Information Systems have been employed, be it in banking, manufacturing, retailing, healthcare and other application scenarios. In this case, the application of Information Systems was not confined to any specific industry, as the conceptual map was intended to be generalized and applicable across diverse industries. Indeed, this exposed any gaps in the existing knowledge that required further investigation. In addition, it also exposed the incongruence in the application of various concepts, either because of their limited application in Information Systems or their inadequate and ambiguous definition in the literature, as observed by Gregor (2006). Moreover, identification of the underlying
concepts and constructs were unearthed, thus facilitating the identification for the purpose of this study. Such as identification of the benefits of effective IT Governance, the capabilities required by organizations in order to benefit from effective IT Governance, and the strategic decisions often undertaken by organizations seeking to implement Information Systems in their enterprises (Caldeira and Ward, 2003). Altogether, the existing knowledge emanating from the literature search was consolidated into three pathways that were used to link effective IT Governance to business value. Each of the pathways was dedicated to addressing the ‘how’, the ‘what’ or the ‘who’ as linkage parameters between effective IT Governance and business value. Specifically, the ‘how’ was associated with process, the ‘what’ was associated with content, and the ‘who’ was associated with the actors involved in linking effective IT Governance to business value.

In addition, the three pathways developed were subjected to two theories to determine their veracity. Then, the resource-based view theory and the knowledge-based view theory were employed to test the applicability of the three pathways in linking effective IT Governance to business value. These theories were chosen for their overarching application in Information Systems within industries where such systems were highly dependent on organizational resources and the management of knowledge in organizations (Cragg, 2008; Gorovaia and Windsperger, 2013). In other words, the success of an information system in an organization relies on the amount and quality of resources deployed by the organization and the manner in which relevant knowledge was acquired, accumulated, leveraged and managed in an organization (Emerson, Nabatchi and Balogh, 2012).

The intended outcome of the conceptual study was a conceptual model that would facilitate an answer to the research question. As such, an initial conceptual model was developed and later improved, and eventually became the more comprehensive Effective IT Governance Business Value (EITGBV) model. The details of this conceptual study are provided in Chapter 4 – Study 1, Conceptual Inquiry.
3.2.2 Phenomenological Study

3.2.2.1 Overview of Research Method

A phenomenological study is a study that makes explicit the presuppositions and meanings of the researcher and the participants (Shanks, Arnott and Rouse, 1993). It focuses on events, experiences and occurrences, but ignores the physical and external reality. It refers to a study of the manner in which individuals perceive the meaning of events, as opposed to the manner in which events exist beyond what the people perceive (Denscombe, 2014). It is commonly employed in business and organizational studies, in which the large quantity of rich data obtained from the study is used to generate ideas through the process of inductive reasoning. The study is also known to incorporate stakeholder perspectives and other human interests in the process of idea generation. Interpretive researches begin with the hypothesis that access to a socially constructed or given reality is through means like language, consciousness and shared meanings. They usually try to understand phenomena through the meanings that are assigned to the phenomena by people them and explanatory approaches of the IS research are "aimed at producing an understanding of the context of the information system, and the process whereby the information system influences and is influenced by the context" (Walsham, 1993). On the other hand, Positivists usually believe that the researcher and his or her research instruments are independent from the measurable properties of an objectively given reality. In order to increase the predictive understanding of phenomena, positivists usually try to test theory (Myers, 1997).

Phenomenological studies have a long history in Information Systems (IS) research, with precedence in areas ranging from cloud computing (Anshari, Alas and Guan, 2016) and ITG (Liaw et al., 2014) to sociomateriality (Gaskin et al., 2014). Anshari, Alas and Guan (2016) investigated the integration of cloud computing, big data and semantic web into online learning resources and how such integration would influence the acquisition of knowledge, an implementation of associated technology. Liaw and colleagues (2014) studied information governance associated with employment of technology in healthcare settings. Phenomenological study is a method that focuses on the actor’s intentions and the symbolic nature of language and universal hermeneutic problem, so it is the preferred research methodology (Boland, 1985).
In addition, phenomenological studies can be heavily influenced by bias that is introduced by the researcher (Denscombe, 2014). As such, the applicability and believability of the results may be challenged if another researcher were to undertake the same study, because the tools of data collection may lack a precise and standardized approach that would make them valid and reliable. Moreover, this approach presents challenges during data analysis and data interpretation. Indeed, the establishment and maintenance of pure bracketing in this methodology is often challenging for many researchers, making the interpretation of data and results prone to interference by the researcher (Gray, 2013).

The present research will also include a phenomenological study. Phenomenological inquiry will be used to investigate how and why effective IT Governance contributes to delivering business value from IT investments, because this research design allows the researcher to understand the important aspects of this phenomenon (Moustakas, 1994), from the lens of those who have practiced IT Governance. This research design calls for rich and descriptive data, usually collected through interview methods, in order to help the researcher understand a phenomenon subjectively based on participants’ perceptions (Moustakas, 1994). While this research design can lead to a deeper understanding of a phenomenon as experienced by participants, ultimately it does not provide objective data.

Dey (2015) utilized phenomenological methods to explore the interplay of IT Governance and cloud implementation in the enterprise context. This author also explored how cloud implementation impacts on IT Governance. Through this phenomenological investigation, Dey (2015) uncovered twelve reoccurring themes in participants’ interview responses. The themes that emerged upon data analysis were accidental cloud adoption, diligent adoption, private cloud inclination, legacy baggage, cost benefits, obviously public cloud, benefits beyond cost, involuntary adoption, regulatory influence, powerful vision, increasing acceptance, and IT Governance needs changes. Similar to the present study, phenomenological methods allowed Dey (2015) to gather the firsthand perspectives of participants who were involved in IT Governance in order to answer essential research questions.
Phenomenological studies involve people who have lived an experience of an event (Gray, 2013). A segment of the population of interest acts as representative to those who have lived the experiences, and as such their responses are taken to represent the perceptions and feelings of the populations they represent. Unlike other qualitative studies, phenomenological studies rely on narratives obtained from participants rather than data collected through questionnaires. As such, interviews play a central role in the data collection process of this methodology. However, since the information collected comprises personal feelings and perspectives, the methodology raises ethical concerns related to violation of the privacy of participants and the confidentiality of the information that they provide (Gray, 2013). As such, seeking consent from participants and assuring them of confidentiality are of paramount importance to the researcher who wishes to employ this methodology. Once consent has been secured, the researcher begins to interact with participants directly or through co-researchers. The data is then collected in its narrative form (Gray, 2013). The quality of the narratives is dependent on the inquiry proficiency of the researcher. Thereafter, the researcher should seek to extract the meaning in the respondents’ narratives, which in turn should help the researcher arrive at the overarching perceptions about a certain experience of an event.

3.2.2.2 Application and Research Design

In this study, the phenomenological methodology was used to extract the perceptions of managers and employees on the business value derived from the utilization of Information Systems in their organizations. In this case, participants were drawn from spectators of effective IT Governance (EITG) advancement and from people whose organizations are EITG stakeholders. The participants were subjected to comprehensive interviews by the researcher (Granot, Brashear and Cesar Motta, 2012). Interviews with members and spectators enabled comprehension of EITG advancements from the perspectives of the general population both directly and indirectly. To guarantee that the interviews would address an extensive variety of members and gather various points of view on EITG improvement, the researcher utilized deliberate examining systems to choose interviewees. Intentional testing goes for expanding data accumulation (Lincoln and Guba, 1985) and distinguishes information–rich hotspots for in–depth information gathering (Patton, 1990). Two targets guided the researcher in selecting interviewees: expanding the breadth of viewpoints on EITG improvement; and concentrating on particular subjects for whom the analyst required extra clarification, portrayal, and refinement.
The objective of these meetings was to guarantee expansive representation of points of view on EITG improvement and expand the scope of data gathered (Granot, Brashear and Cesar Motta, 2012). Information from these meetings shed extra light on answers to the first research question.

The phenomenological study included in this research involved semi-structured interviews with twenty participants. Participants consisted of executives, managers, and subordinates involved in IT Governance at a local firm. Purposeful sampling was used to determine participants’ eligibility for the study, which involved determining eligible participants based on specified criteria (Palinkas et al., 2015). The criteria considered were whether or not participants worked at the specified local enterprise, and if they held some degree of responsibility within the IT Governance structure at that enterprise.

The top executives at Australian firms that had a formal IT Governance structure were asked to sign a participation form, thereby giving their consent for their organization to participate in this study. Information packets were emailed to participants, containing information about the study including the topic, what would be required of participants, a letter of informed consent for participants to sign, and researcher contact information. Senior executives from business and IT, as well as mid-operational level managers were. Those who were involved in business-IT decision making and IT Governance processes in Australian enterprises with more than 500 million dollars in revenue per year. In total, twenty interviews included in this study who talked about their experience in their current and previous roles.

Each interview lasted between 60 and 75 minutes to ensure that adequate detail was gathered. The interview guide used for collecting data was developed and refined by the researcher to ensure that the research questions were adequately addressed. Interviews were recorded with an audio recording device and then transcribed so that coding and analysis could be conducted. Concept coding was used to help the researcher identify short phrases and words that represented larger ideas that appeared in the data (Saldana, 2015). Next, thematic analysis was conducted, by analyzing the patterns and reoccurring themes that had become apparent following the coding stage (Taylor, Bogdan, and DeVault, 2015). Sections 5.2, 5.3 and 5.4 explain the details of how this phenomenological study was conducted including the data collection and analysis processes in full detail.
3.3 Assuring Validity and Reliability of the Research

3.3.1 Conceptual Study

Conceptual studies are anchored in the reorganization of existing concepts and constructs to arrive at new conceptualizations that facilitate a better understanding of the issue underpinning the research question. In the validation of conceptual inquiries, conformance to some existing constructs and theories is paramount because it is a reflection of the soundness of its grounding on available theories (Markus and Borsboom, 2013). In this respect, in assuring the validity of a conceptual study, the researcher must strive to demonstrate the manner in which the research issue can be fragmented into parts that are supported by existing theories. In this deconstruction stage, the issue under study should be broken down into its most basic concepts that can facilitate comprehension of the issue and thus guide its study thereafter. In addition, Gable, Sedera and Chan (2008) claimed that the constructs arrived at during deconstruction of the issue should be supported in literature, which thus validates their association with the issue from the perspectives of different authorities. Reliability is highly dependent upon the reproducibility of the research approaches used and the consistency of the results they produce after being employed in similar circumstances (Silverman, 2013). For example, if the conceptual study were undertaken in different circumstances or by different researchers and they arrived at the same conceptual foundations, this would indicate its reliability. Indeed, the methodological soundness of the reasoning in the application of various theories underpins reliability in this case (Burnes and Cooke, 2013).

However, the lack of a particular instrument whose reliability and validity can be determined differentiates conceptual studies from other types of qualitative studies. In this case, the focus is on the logical utilization of existing theories and arrangements of such theories and their concepts and constructs in new ways that bring new meaning to experiences and provide new explanations to observed happenings within a given population (Swanson and Chermack, 2013). As such, the reliability and validity of a conceptual design is anchored in the reproducibility of the logic employed in deconstructing and constructing the subject of the study.
Certain steps were taken when developing the conceptual study section of this research, in order to ensure validity and reliability. While Krogstie, Linland, and Sindre (1995) noted that no existing evaluation method is specifically intended to evaluate the validity or reliability of conceptual studies, many researchers have suggested that certain steps be taken to ensure the quality of conceptual models developed through conceptual studies. Krogstie, Linland, and Sindre’s (1995) framework evaluated conceptual models on the basis of three dimensions: syntax, pragmatics, and semantics. Syntax refers, in this context, to how closely the language used to describe the model correlates with the ideas the model represents. Semantics refers to whether or not the model contains invalid statements. Lastly, pragmatics references how well the model is understood by its audience.

The model presented in the conceptual study undertaken in this research, which details how effective IT Governance can lead to business value, was evaluated and edited along the three aforementioned dimensions. Table 3.1 details the steps suggested by Krogstie, Linland, and Sindre (1995) to ensure the validity and reliability of the resulting model developed in the conceptual study.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syntax (syntactic correctness)</td>
<td>Error prevention, error detection, error correction</td>
</tr>
<tr>
<td>Semantics (feasible validity)</td>
<td>Consistency checking, driving questions, statement insertion, statement deletion</td>
</tr>
<tr>
<td>Pragmatics (feasible comprehension)</td>
<td>Inspection, visualization, filtering, diagram layout, paraphrasing, explanation</td>
</tr>
</tbody>
</table>

These steps were taken when applicable to ensure the validity and reliability of the conceptual model proposed in the present research. Specifically, syntactic correctness ensures content validity while semantics ensures feasible validity of the framework developed. Statement insertion and deletion occurred frequently in an effort to better clarify the relationship between effective IT Governance and IT business value. This ensured pragmatic reliability, thus making the framework comprehensible. For this, the model was visually diagrammed so that the described relationships were readily understandable and visually guided. Additionally, filtering was conducted to ensure that the relationships presented were clear and concise (Krogstie, Linland, and Sindre, 1995).
3.3.2 Phenomenological Study

To ensure validity and reliability of a given study, assessment of qualitative research and case studies is usually carried out (Yin, 2003; Healy and Perry, 2000; Miles and Huberman, 1994). When data collection and analysis are fulfilled via an approach that results in a precise reflection and representation of the phenomenon under inquiry (Yin, 2011), then the research study is considered to be valid. As such, in phenomenological studies, validity is perceived as and equated to plausibility, credibility and trustworthiness. Furthermore, reliability focuses on the appropriateness of the research instruments used (Churchill, 1987). If the research instrument leads to the same data whenever it is used, and any potential deviation in the data is due completely to the phenomenon under investigation, an acceptable level of reliability is achieved (Denscombe, 2003). With the purpose of ensuring the reliability and validity of the research, procedures that reinforce a study’s arguments, findings, or explanations of events should be applied by researchers (Maxwell, 2009; Yin, 2011). Healy and Perry advised, with regard to scientific paradigms, “the quality of scientific research done within a paradigm has to be judged by its own paradigm’s terms” (2000, p. 120). To reassure the validity and reliability of this study, and because realism is the scientific paradigm fundamental to this study, it is necessary to determine how particular quality criteria and procedures were applied.

Validity and reliability measures in qualitative research, including phenomenological studies, are well established (Moustakas, 1994). Morse et al., (2002) proposed five verification strategies that authors can use to ensure that their qualitative research is reliable and valid; the present phenomenological study was conducted with these strategies in mind. Table 3.2 details the five verification strategies proposed by Morse et al. (2002).
Table 3.2: Verification strategies proposed by Morse et al. (2002)

<table>
<thead>
<tr>
<th>Verification Strategy</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methodological coherence</td>
<td>Ensuring and justifying congruence between the methods used and the research question(s)</td>
</tr>
<tr>
<td>Appropriate sampling</td>
<td>Participants should have knowledge of the study’s topic, sample should reflect data saturation</td>
</tr>
<tr>
<td>Concurrently collecting and analyzing data</td>
<td>Study begins with what is known, methods used to investigate what needs to be known</td>
</tr>
<tr>
<td>Thinking theoretically</td>
<td>Knowledge reflected in literature review (previously collected data) is confirmed by new data</td>
</tr>
<tr>
<td>Theory development</td>
<td>Theoretical knowledge is developed as either: An outcome of conducting research or a template to later compare and develop following data collection</td>
</tr>
</tbody>
</table>

These strategies were applied due to their relevance to the phenomenological portion of this research. Justification was obtained and stated regarding why the proposed methodology is well suited to the aims of this research. Participants were selected purposefully to ensure that they were knowledgeable about the research topic. The resulting methodological coherence, sampling appropriateness and data analysis process aimed at ensuring the methodological validity of the study. However, to ensure the reliability of the findings obtained from the study, the researcher employed theoretical thinking and development of theory that was based on logic and published evidence. Notably, the present research is based in a literature synthesis regarding current understandings of effective IT Governance and its connection to building IT business value. Therefore, the conceptual model developed through this research served as a template to compare to data gathered through phenomenological participant interviews (Morse et al., 2002).
3.4 Chapter Summary

This chapter has outlined, highlighted and justified the qualitative research, and the conceptual and phenomenological studies that were undertaken. The qualitative research enabled better understanding of a complex subject: that is, how IT Governance is employed in organizations and the contributions it makes to business value. Considering that Information Systems are evolving rapidly, the governance issues associated with information technologies are becoming increasingly challenging as this field ventures into new and previously unstudied horizons. Therefore, the exploratory nature of qualitative research was useful in this study because it facilitated the discovery of new aspects of an occurrence in an organizational environment. At the same time, the rapid and continuous transformation of IT and the governance issues it raises require that existing theories of corporate governance and Information Systems be rearranged in new ways. This would help to explain the emotions, beliefs, attitudes and experiences of people hoping to reap organizational benefits from the employment of Information Systems, and how they would contribute to the advancement of effective IT Governance that is aimed at delivering the desired outcomes. Subsequent chapters will further explain the methods used for both the conceptual study (Chapter 4) and the phenomenological study (Chapter 5) involved in this research.
4 STUDY 1 — CONCEPTUAL INQUIRY OF HOW EFFECTIVE IT GOVERNANCE LEADS TO BUSINESS VALUE - ORGANIZATIONAL PERSPECTIVE

4.1 Chapter Introduction

In literature review, the researcher tries to make sense of all that is in the literature to identify existing knowledge gaps. On the other hand, a conceptual study gives the researcher the opportunity to create artefacts and also develop a whole new way of looking at a problem, so it is more than a literature review. It fundamentally comprises a creative design as well as a synthesis that makes it go further than a literature review. In response to the identified knowledge gap, this chapter describes a conceptual study that produces an output to the initial research model, and reports on results from the literature review in a synthesis that seeks to answer the following question:

• How does effective IT Governance lead to business value and why?

In this conceptual study, the research question will be explored at an organizational level and in the next chapter, which describes a phenomenological study, IT Governance decision-making processes will be explored from the perspectives of individuals involved in those processes. Figure 4.1 represents a basic model that illustrates the link between effective IT Governance and the business value derived from IT.

Initial EITG to BV model

Figure 4.1: Initial EITG to BV model

2 Parts of this chapter have been published in a peer reviewed academic paper (presented in Appendix 4).
The model represents the contribution of effective IT Governance to Business Value, which will be identified by this conceptual study. To this end, the conceptual study should be able to answer why it is important to have effective IT Governance in an organization that facilitates the increase of business value from IT investments. In addition, the conceptual study should be able to respond to how such facilitation can be effected in a business environment.

The chapter is laid out as illustrated in Figure 4.2. Specifically, the chapter starts with a synthesis of the literature, which gives an overview of how effective IT Governance leads to business value. Next, the Resource-based View and Knowledge-Based View theories are introduced to explain how and why effective IT Governance leads to business value from an organizational point of view. In this case, the resources required to make IT Governance effective in delivering business value are considered. Following that, the Effective IT Governance-Business Value model is presented, which is the result of a completely new way of looking at the phenomenon using a three-pathway lens. Then, the way in which the model answers the research question is explained, and the findings of this conceptual study are presented thereafter by providing several propositions.
Chapter 4 – Conceptual Inquiry

Filling the Gap in Knowledge

Three Pathways from EITG to BV

Theoretical Foundations

Resource-Based View Theory

Knowledge-Based View Theory

The Research Model

Effective IT Governance to Business Value

Definition of Constructs

Findings and Proposition Formulation

How does the model answer the research question?

Chapter Summary

Figure 4.2: Structure of Chapter 4 – Conceptual Inquiry
4.2 Overview of How Effective IT Governance Leads to Business Value

IT has become an important part of organizations. However, a challenge arises in how to implement a governance structure that can realize the potential of IT. As seen in this literature review, the importance of IT Governance has been established and recognized based on the findings of several studies. IT Governance is an important part of the enterprise governance mechanism in an organization, and is a fundamental part of corporate governance. It entails a form of evaluation, and usually directs the use of IT to support and monitor the organization so as to achieve expected goals.

IT Governance will therefore include strategies as well as policies for utilizing IT within an organization (Wilkin, 2012). IT Governance is a crucial part of corporate governance and thus a responsibility of the board of directors and executive management, including the leadership organizational structure and processes. However, these stakeholders need to be resourceful so as to ensure that the IT organization can not only support, but also expand the strategies and objectives of the organization (Turlea et al., 2010). Typically, IT Governance as a decision-making and accountability framework encourages desirable behavior related to the use of IT. As an organizational capacity and capability, IT Governance is usually done by the board, the executive management and the IT management with the objective of controlling the implementation of the IT strategy – with the desire to integrate IT into the business (De Haes, Van Grembergen, and Debreceny, 2013).

4.2.1 Filling the Gap in Knowledge

There have been very few publications trying to explain how and why effective IT Governance leads to the claimed benefits. The following studies were identified as going further than just naming the benefits of IT Governance: Korac-Kakabadse and Kakabadse (2001), Weill and Ross (2004), Peterson (2004), and Broadbent and Kitzis (2005). The discussions in these studies, with regard to the ‘how and why’ of effective IT Governance leading to business value, are occasionally vague, deficient and suffer from a lack of empirical validation. Moreover, the need to consolidate the scattered explanations is clear to improve the understanding of the concept in the literature. Finally, considering the different definitions of key terms used in each study, the claimed benefits of effective IT Governance and the provided answers to ‘how and why’ are contingent upon their (less than comprehensive) definitions of IT Governance.
Although these references offer some explanations, they are inadequate, which is explained further below. Accordingly, we needed to develop an integrated, holistic view. In order to do that, we needed to synthesize these references into models and then incorporate the Resource-Based View and Knowledge-Based View theories to ground the overall theory.

To come to a better understanding of how and why effective IT Governance leads to the benefits discussed, a summary of publications providing such explanations was represented in various diagrams. In these diagrams, presented in Figures 4.3, 4.4, 4.5 and 4.6, each arrow represents an explicit association in the author’s argument. For example, Figure 4.3 shows the reasoning Broadbent and Kitzis (2005) presented on pages 106-108 of their book. As discussed previously, Broadbent and Kitzis (2005) argue that effective IT Governance builds trust, means better delivery, synchronizes IT strategy with business strategy, and finally, encourages desirable behaviors in the use of IT. They believe the CIO’s colleagues across the enterprise need to understand and support how IT-related decisions are made in order to sustain trust in the CIO’s leadership.

Good IT Governance makes IT-related decisions and accountabilities transparent and hence trustworthy, as noted by Broadbent and Kitzis (2005). In addition, they claim that ultimately, the CIO’s credibility depends on delivering business value from IT. With effective IT Governance in place, it is more probable that only IT projects that support business goals and are likely to achieve success will be undertaken and assigned resources. Rapid changes in the business context drive business strategies to change more frequently. That is where the necessity for robust systems of governance becomes apparent. True capability in integrating business and IT can exist only when clear and strong systems of IT Governance exist. Nothing can reduce action to slow progress as quickly as doubt about “who decides what and who is responsible for what”. Active synchronization of IT strategy with business context is achieved with good IT Governance. Eventually, IT Governance constructs the atmosphere and the basis for desirable behaviors in the use of IT: practices such as cost lowering, customer data sharing, or the stimulation of innovation. The encouragement of these activities is necessary because the CIO cannot be everywhere in the organization, personally influencing and checking every IT-related decision. Good governance helps to ensure that actions taken by individuals and groups
throughout the enterprise will be consistent with the goals of the company, whether or not the CIO or other members of the CIO’s staff are present (Broadbent and Kitzis, 2005).

From the initial EITG to BV model, additional components that would serve as a link between effective IT Governance and business value are illustrated in Figure 4.3.

Figure 4.3: Effective synchronization of IT strategy with business context

Modelling Broadbent and Kitzis’ (2005; p. 107-108) discussion

Figure 4.3 represents that effective IT Governance facilitates better delivery, builds trust, synchronizes IT strategy with the business strategy, and encourages desirable behaviors in the use of IT. In addition to this, IT Governance benefits companies in various ways, such as decreasing costs, optimum utilization of resources, improvement of organizational capabilities, and sharing of data regarding customers in an effective and safe manner. All these features lead to increased value for the enterprise and improve its functioning.
Figure 4.4 shows how effective IT Governance tends towards business value. As per this model, various steps take place during the conversion process. These steps consist of approval of resource allocation; e-commerce resources; application of IS/IT capabilities and competences; assurance of security, privacy, and data protection, and many more. All of these functions help to develop effective business activities and an effective working environment, and this all leads to greater business value. This requires the decision-maker to possess the necessary skills or capabilities to ensure that the resources allocated have the most impact in delivering business value efficiently. Additionally, it is also important to have proper synchronization among processes, with the right selection of strategies and approaches (Korac-Kakabadse and Kakabadse, 2001).

Figure 4.4: Effective IT Governance and its benefits
Modelling Korac-Kakabadse and Kakabadse’s (2001; p. 10) discussion

Korac-Kakabadse and Kakabadse (2001) claim that a) expanding an integrated business and IS/IT plan, b) assigning responsibilities and accountabilities, and c) setting priorities and arranging IS/IT initiatives are the outcomes of effective IT Governance. These outcomes occur through approving both resource allocation decisions and e-commerce resources; applying IS/IT skills and capabilities development audits; guaranteeing security, privacy, encryption, exchange, reliability and integrity of strategic information; protecting IT investments; applying appropriate safeguards to the corporation's information assets; reacting appropriately against monopolistic...
manners of IS/IT providers, and finally, activating IS/IT ethical standards (Figure 4.4). However, Korac-Kakabadse and Kakabadse (2001) believe that the different forms of IT/IS governance models employed and their related variables, such as rules, regulations, and substantial culture, influence the quality of IS/IT Governance considerably.

Peterson (2004) argues that IT Governance’s structures, processes, and relational capabilities direct and coordinate the versatile actions related to the planning, arrangement, and control of IT (Figure 4.5). Peterson believes that both the differentiation and integration of IT decision-making across business and IT need to be involved in designing effective IT Governance architectures. Peterson emphasizes that both the allocation of formal IT decision-making authority, and the coordination of IT decision-making expertise, are required to eventually develop organizationally valued skill sets (business and IT), gain improved understanding of business needs, and align strategic IT investments with the business’s strategic objectives. However, Peterson’s 2004 model does not explain in detail how the direct outcomes of effective IT Governance are achieved, such as how and why effective IT Governance leads to a business-IT partnership or shared learning.
Figure 4.5: How effective IT Governance leads to business benefits

Modelling Peterson’s (2004; p. 12-15) discussion

Different tools, well-designed mechanisms and clarity, along with innovativeness, balanced culture, internal policies and the history of an organization, help IT Governance leads to the development of desirable behavior with respect to the use of IT. All of these capabilities help businesses to make effective decisions and to select the appropriate strategic decisions for development and enhancement of the organization. This helps to improve business activities and results in increased profit margin, better market position and acquisition of competitive advantages.
As mentioned previously, Weill and Ross (2004) claim that effective IT Governance is the single most significant predictor of the value that organizations can generate from IT. Figure 4.6 represents Weill and Ross’s (2004) argument, which states that business value is the result of behaviors, not a strategy. Weill and Ross (2004) believe, from an IT Governance perspective, that an enterprise strategy is a group of clear, concise statements clarifying the enterprise’s strategic goal. These statements express an agreed upon position that can be easily communicated. The attention of all employees is focused on simple and achievable messages in the strategy, whether or not the employees are part of the plan-making process. Usually, strategy statements articulate one or more of the following: relationships among business units, the competitive thrust of the enterprise, and objectives for the role and management of information and IT. Business performance goals establish clear target objectives for the governing bodies and a benchmark for assessing the success of governance efforts.

The direction for IT structure and desirable behavior is provided by the enterprise strategy and organization. Weill and Ross’s (2004) definition of governance – “specifying the decision rights and accountability framework to encourage desirable behavior in the use of IT” – does not include strategy. Instead, the focus is on desirable behavior of the enterprise’s people. They claim that action-behavior, not strategy, creates business value. Incentives, culture, internal politics, and organizational history are among factors that can influence behavior. To achieve performance goals, the desired behavior must be in harmony with strategic direction. Good governance design requires measurement and accountabilities.

As illustrated in Figure 4.6, strategic decisions in an enterprise are influenced by incentives, culture, internal politics and organizational history, as they seek to develop desirable behaviors governing the use of IT in the organization.
Figure 4.6: Enterprise’s strategic decision

Modelling Weill and Ross’ (2004; p. 14-155) discussion

Articulating who is responsible for what and how they will be evaluated provides clarity, ownership, and tools to assess IT Governance performance. Desirable behaviors regarding the use of IT are converted into the outcomes by well-designed mechanisms. Although only a few managers see the Governance Design Framework, most managers interact with one or more of these devices on a daily basis. Some mechanisms deal with several types of decisions, for example, the executive committee, which makes principle decisions and individual investment decisions; and some mechanisms deal with mainly one type of decision, for example, the architecture committee, which makes design decisions. Desirable behaviors are reinforced and encouraged by well-designed mechanisms and lead to the outcomes specified in the IT metrics and accountabilities (Weill and Ross, 2004).
Although Weill and Ross (2004) provide a complex model explaining how effective IT Governance leads to desirable behavior in the use of IT, they fail to explain in detail how and why this desirable behavior leads to business value.

A comparison of Figures 10, 11, 12 and 13 reveals that although different ideas have been provided on how effective IT Governance leads to business value, some patterns are visible. For example, the importance of clarifying accountability and responsibility, as well as desirable behavior in the use of IT, is repeated multiple times.

### 4.2.2 Three Pathways from EITG to BV

A combination of all of the diagrams described above results in three pathways from effective IT Governance to business value, presented in Figure 4.7.

![Figure 4.7: Initial Research Model](image)

Figure 4.7 shows that EITG follows three pathways of How (the Process Perspective), Who (the Actor Perspective) and What (the Content Perspective) that underpin the outcomes of capabilities and resources in the form of applicability of mechanism, clarity of accountability and responsibility, and desirable behavior in use of the IT. All of these features together tend to increase business value through elevating the competitive advantage of the organization. Thus, from Figure 4.7 it is clear that IT Governance plays an essential role in developing business value.
4.3 Theoretical Foundations

This study aims to find answers to various questions, of which few were answered in the previous sections: that is, a comprehensive definition of IT Governance, the proper definition of effective IT Governance and the benefits of effective IT Governance. The main question this research aims to answer is how and why effective IT Governance leads to the benefits established. This study is grounded in the following theories, which are compared with the findings later in the study. In this section, first the key findings from the literature review will be summarized, and then the theoretical frameworks of the Resource-Based View and the Knowledge-Based View will be discussed before presenting the research model.

4.3.1 Resource-Based View Theory

The business value of IT is relatively hard to measure. Nevertheless, it is among the most commonly debated issues within the information system literature of the past two decades. The contribution of IT, or rather its value to the performance of businesses, has been studied primarily from two broad perspectives according to Rivard et al. (2006). In the first paradigm, and according to Michael Porter’s competitive framework (1980), IT is described as a way of altering the competitive forces that collaboratively determine the profitability of the industry, which can be affected either by lowering costs or improving differentiation. The resource-based view of the firm is the second perspective. This view sees the firm as a bundle of resources or capabilities that includes humans, processes, knowledge and assets. It is built on the assumption that resources can be heterogeneously supplied among competitors. Another assertion is that some of these resources are usually imperfectly mobile and can thus result in a sustainable competitive advantage as explained by Mata et al. (1995).

The objective of this study is to examine the effect of IT Governance on the business performance of the firm through its value creation. In this context, therefore, IT is considered as a crucial resource of the firm. Consequently, the nature of this analysis is built on an intra-organizational focus. On a more particular note, the aim of this research is to explain the influence of complex social relations within the firm’s boundaries on the firm’s different outcome levels of success. This is with respect to the exploitation of Information Systems (IS) as well as the surrounding IT infrastructure of a given company. The resource-based view addresses these types of internal connections as a potential cause for performance variations. On the other
hand, the market-based perspective does not focus on these links as a possible source of enhanced business performance and subsequently, competitive advantage. As a result, it is reasonable to choose the resource-based view as the most appropriate theoretical foundation for analyzing the effect of IT Governance on business performance. This is mainly because it offers a proper investigative framework.

To ensure effective and efficient allocation and utilization of resources, the company management must understand the exact roles played by such firms. Several researchers have tried to establish the varying roles played by different resources owned by a company. Edith Penrose was among the very first researchers to discover the role played by the resources in the competitive position of a firm. In 1959, she argued that the growth of business—both internally and externally through acquisition, merger or diversification—occurred because of the way in which the resources are deployed. Penrose first argued that an organization is made up of a collection of productive resources. She further suggested that these resources might only contribute to the competitiveness of a firm to the extent that they are exploited in a manner that their valuable services are availed to the company. Apart from Penrose, Rubin (1973) is said to be among the few researchers who conceptualized a firm as a resource bundle before the formal origins of the resource-based view by Wernerfelt (1984). Like Penrose, Rubin also recognized that resources were not of much use when deployed alone. Rather than merely being in possession of resources, Rubin argued that it is mandatory for companies to process raw materials in order to make them useful. Building on the inroads made by Rubin and Penrose, Wernerfelt argued that, for a firm, products and resources are typically two sides of the same coin. This was during his first attempt to formalize the resource-based view. Simply put, while the products of the firm directly drive its performance, the performance is ultimately indirectly driven by the resources that are usually factored into their production; Barney further explained this point (1986) around two years later. In this line of reasoning, Wernerfelt (1984) suggested that firms could earn more than the normal returns through the identification and acquisition of resources critical to the development and production of demanding products. Due to the abstract nature of his seminal work, the larger acceptance of his theoretical perspective did not gain immediate support from academic audiences. The widespread recognition of the resource-based view did not start to accumulate until at least several years later.
Melville et al. (2004) defines the improvement of organizational performance as increased efficiency or effectiveness. Undoubtedly, this is extremely close to the resource-based view’s idea of value, since valuable resources offer an organization the possibility of implementing strategies that help to enhance the firm’s efficiency and effectiveness (Mata et al., 1995). In this chapter of the research study, we use the construct of business performance as explained by Sabherwal and Chan (2001). This will help to evaluate the sustainability of the accomplished competitive edge using the resource-based view model. The work of Melville et al. (2004) contains some the most influential debates on ITBV from the perspective of the resource base. Melville et al. conclude that IT regularly adds value to the organization, although not directly. According to these authors, value creation happens via the enhancement of business processes and improvement of business capabilities. Further, the dimensions and extent of the value added depend on a number of factors, such as the environment of the firm and complementary resources. In that regard, an examination of the effects of IT Governance should concentrate on these dimensions as well as the mechanisms thereof.

In this study, the resource-based view theory has been applied to explain the allocation of resources and their deployment in IT-related matters within the organization. According to Caldeira and Ward (2003), organizational competencies determine the long-term success of the deployment of Information Systems and IT that differentiates many organizations. As such, organizations with poor financial and human resources are likely to be poorly prepared to adopt and implement new technologies and enable the necessary changes required to functionalize the new technologies effectively.

However, this study has interpreted resources to mean organizational capabilities that can be leveraged to ensure that effective IT Governance can be translated into business value from the application of IT in organizations. In this light, structural, process and relational capabilities were identified as the pertinent resources that can determine the effectiveness of IT Governance in deriving business value from IT investments in an organization. This reasoning has been reiterated by Craigg (2008), who applied the resource-based view theory when he observed that resources are comprised of skills and knowledge in addition to physical resources. As such, capabilities are resources that are intangible and can be employed by an organization to gain competitive advantage, which in this case can be manifested as business value (Zárraga-
Rodríguez and Alvarez, 2013). In this study, these intangible resources or capabilities help to explain what is required to translate effective IT Governance into business value. Ultimately, these resources were compressed into capabilities that were needed to facilitate desirable behaviors in the organization, applicable IT Governance mechanisms, and clarity of accountability and responsibility in mid-operational levels. As a result, the application of IT through effective governance mechanisms can effectively deliver business value. In this case, the process of developing and implementing effective governance mechanisms is a resource-intensive undertaking that requires the mobilization of both tangible and intangible resources in the organization. This is because the translation of effective IT Governance into actual business value is the question being addressed by this study.

However, as explained previously, it was evident from the models created that IT Governance capabilities cannot be used in isolation if they are to yield maximum benefit for the organization. As such, the interrelationships between the capabilities were found to be essential for the success of effective IT mechanisms and processes. This may explain why, for a firm employing IT, business process management helps to ensure that the organization’s internal activities are of sufficient quality and quantity to facilitate attainment of the firm’s strategic goals. Indeed, Wong, Tseng and Tan (2014) observed that, to realize effective business process management (BPM), organizational resources or capabilities need to be categorized as managerial and technical capabilities, thus informing the governance modelling required to deliver superior performance to an organization. As such, managerial and technical capabilities were not only needed to facilitate the development and implementation of effective IT Governance mechanism and strategies, but the same capabilities were derived as business value when effective IT Governance was well implemented and functional in an organization.

Accordingly, the resource-based view theory was also employed in this research to elucidate the manner in which capabilities are improved as part of the business value derived from effective IT Governance. The intended outcomes, such as desirable behavior in the use of IT, applicable IT Governance mechanisms and clarity of accountability and responsibility in mid-operational levels, were identified in the conceptual model as being valuable outcomes that would augment the resources of organizations.
In addition, identification of such resources guarantees their improved allocation, as the mechanisms of effective IT Governance continue to improve in the organization and as the organization gains more experience in the allocation of such resources. This means that identification of the resources needed and generated by effective IT Governance should ultimately lead to the improvement of the organization, in which more resources are generated over time. As such, resources can be self-generating in an organization and thus become a source of competitive advantage, especially when they are manifested in the form of capabilities rather than physical resources.

4.3.2 Knowledge-Based View Theory

The knowledge-based view is an effective extension of the resource-based view model (Spender, 1996). This is mainly because IT Governance involves not only tangible but also highly intangible assets as well, such as knowledge-based social structures. Within the knowledge-based view, the services rendered by tangible resources are considered dependent in the manner of their combination and application—this in turn becomes a function of ‘know-how’, as described by Alavi and Leidner (2001). This knowledge is embedded and also carried within both tangible and intangible elements of an organization. They can, for instance, include people, policies, and documents, working schedules and systems, as well as the organizational structure (Grant, 1996). Because of the complex nature of knowledge, knowledge-based resources are seen as quite difficult to imitate, particularly if they are embedded within an organizational. The knowledge-based view postulates—of course, based on the resource-based view insights—that the knowledge asset is unfairly distributed among competitors.

Ultimately, this may lead to long-term sustainable competitive edge (Grant, 1996). Just like labor, knowledge is normally divided across the staff members and thus, knowledge assets are also distributed across the organization. For instance, a chemist in the research and development division possesses specialized knowledge that mathematicians in the finance department neither have nor require, and vice versa. According to Jensen and Heckling (1995) such specific knowledge is defined as knowledge of a particular circumstance of place and time.
This level of knowledge specificity can be classified into two major domains: namely, the context-specific and the scientific-specific knowledge (Choudhury and Samper, 1997). It can be argued that, with respect to Information Systems and IT, business units primarily hold context-specific knowledge.

On the other hand, IT departments primarily possess technology-specific knowledge. To ensure successful implementation and IT Governance, it is important to intertwine the two knowledge assets. Although business units require an understanding of the limitations and potential of technology, it is particularly the IT division that has to repeatedly combine the context-specific and the technology-specific knowledge of the company. As such, the IT department must acquire context-specific knowledge from the business units on a consistent basis. According to the knowledge-based view, it is not only knowledge assets that are unfairly distributed among companies, but also the abilities to absorb and implement this knowledge. The former is known as absorptive capacity and is usually understood—via Cohen and Levinthal’s (1990) definition—as the ability of a company to use knowledge. From the perspective of a company’s IT department, the notion of outside knowledge is referred to as any knowledge that did not initially reside within the IT department, such as detailed knowledge of organizational business processes. The absorptive capacity of an IT department is made even less mobile by the fact that it is less tangible and deeper-rooted in the organizational and social setting relative to the knowledge assets themselves. Consequently, observing the knowledge-based view is more valuable and also a good way of generating sustainable competitive advantage.

In this study, the knowledge-based view theory has been used to help explain how knowledge possessed by different agents in an organization can be a valuable resource if only it can be harnessed to contribute to the attainment of organizational goals. Where this does occur, the tacit and explicit knowledge held by the managers and employees of an organization can not only help in the utilization of IT, but can also ensure that IT delivers the desired value to customers and other pertinent stakeholders. Specifically, the structural, process-relational capabilities required for guiding the implementation of effective IT Governance are dependent on the knowledge held by the management and workforce of an organization (Van Grembergen, De Haes and Guldentops, 2004). The process capabilities are particularly important as they determine the eventual performance of the organization’s effective IT Governance.
However, such knowledge is only useful if it is transferred or shared in the organization, otherwise it remains a non-contributory asset. Gorovaia and Windsperger (2013) agreed that knowledge transfer was essential for gaining and sustaining organizational advantage. Also, its allocation as a vital resource was not pegged on pricing mechanisms or managerial assertions, but on governance models among peers. As such, the governance models adopted in this study enabled IT knowledge to be applied to technology-use in a way that yielded organizational value. So, the theory enables the treatment of knowledge to become a valuable organizational resource: one that should not be ignored when designing effective IT Governance mechanisms to deliver business value (Orsi, 2009). Table 4.1 below clarifies the relationship between Study 1 – Conceptual Inquiry and Process Theory (Markus and Robey, 1988) and the resulting novel model and the theoretical foundations of the RBV and the KBV.
### Table 4.1 – The relationship between Study 1 – Conceptual Inquiry and Process Theory

(Markus and Robey, 1988)

<table>
<thead>
<tr>
<th>ROLE OF TIME</th>
<th>Process Theory</th>
<th>Conceptual study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Longitudinal</td>
<td>The identification of the resources needed and generated by effective IT Governance should ultimately lead to the improvement of the organization, in which more resources are generated over time.</td>
<td></td>
</tr>
</tbody>
</table>

| DEFINITION | Causation consists of necessary conditions in for the sequence; chance and random events play a role | Considering the different definitions of key terms used in each study, the claimed benefits of effective IT Governance and the provided answers to ‘how and why’ are contingent upon their (less than comprehensive) definitions of IT Governance. |

| ASSUMPTIONS | Outcome may not occur (even when conditions are present) | The assumption that resources can be heterogeneously supplied among competitors. Another assertion is that some of these resources are usually imperfectly mobile and can thus result in a sustainable competitive advantage as explained by Mata et al. (1995). |

| ELEMENTS | Discrete outcomes | The expected outcomes of effective IT Governance which are a combination of Desirable Behavior in the use of IT, Clarity of accountability and responsibility in mid-operational levels, and Applicability of mechanisms |

| LOGICAL FORM | If not X, then not Y; cannot be extended to “more X” or “more Y” | Each of the three IT Governance capability dimensions is embedded in a chain of cause and effect logic that connects effective IT Governance to organizational benefits, and which explains the process for transforming intangible assets into the claimed benefits discussed above. |
4.4 The Research Model

4.4.1 Effective IT Governance to Business Value Model

Based on the literature review and the thorough synthesis provided above, the mechanism through which effective IT Governance leads to greater business value is as shown in Figure 4.8 below. This model explains that the outcomes of effective IT Governance capabilities lead to business value indirectly via three different pathways. These outcomes consist of Applicability of Mechanisms, Desirable Behavior in the Use of IT and Clarity of Accountability and
Responsibility in Mid-Operational Levels. When all three are properly addressed together, business value is more likely to be gained from the capabilities of effective IT Governance. According to the Effective IT Governance and Business Value (EITGBV) model, the solid arrows represent the explicit association and the dotted arrows indicate a strong implicit association derived from the literature review analysis. The integrative model builds upon accumulated knowledge to focus on a) the three-dimensional framework for effective IT Governance, b) expected business value from IT Governance and c) mediators of the relationship between effective IT Governance and business value as illustrated in Figure 4.8.

Figure 4.8: Effective IT Governance Business Value (EITGBV) Model
Based on Figure 4.8, we argue that this EITGBV model a) is more comprehensive than previous explanations because it covers all of the three dimensions of IT Governance (What, Who and How), b) is simpler, that is, more parsimonious than the previous models, and c) offers a more accurate explanation of the way in which effective IT Governance leads to business value. Although some authors have provided complex explanations about this previously, not all are completely correct. For example, in Weill and Ross’s (2004) explanation, desirable behavior in the use of IT directly drives business value, but in the model above we argue that desirable behavior in the use of IT is one of the mediators of the relationship between effective IT Governance and business value. In order to achieve business value from IT, all three mediators need to be in place. In other words, if any of these moderating variables are not there, effective IT Governance will not necessarily lead to business value from IT.
4.4.2 Definition of Constructs

Figure 4.8 above contains five constructs, whose definitions can be found in Table 4.2, and seven propositions. The seven propositions in Figure 4.8 are discussed and justified in the sections that follow.

Table 4.2: Definition of concepts in the EITGBV Model

<table>
<thead>
<tr>
<th>Construct</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capabilities of effective IT Governance</td>
<td>A component of corporate governance that seeks to ensure that the utilization of IT in an organization yields outcomes that advance the strategy of the organization. Refer to Chapter 2, Table 2.7 above.</td>
</tr>
<tr>
<td>Business Value</td>
<td>The expected benefits from IT Governance: 1) strategic alignment between IT and enterprise objectives, 2) protecting the enterprise’s investment in IT, 3) taking advantage of current business opportunities, and 4) avoiding potential business threats.</td>
</tr>
<tr>
<td>Outcomes of Effective IT Governance</td>
<td>The expected outcomes of effective IT Governance which are a combination of Desirable Behavior in the use of IT, Clarity of accountability and responsibility in mid-operational levels, and Applicability of mechanisms as defined below.</td>
</tr>
<tr>
<td>Capabilities / Resources</td>
<td>Tangible and intangible resources that can be employed by organizations in developing and implementing IT Governance measures. In this case, most organizational resources in the study model are intangible and thus take the form of capabilities. Resources and capabilities are used in the study interchangeably.</td>
</tr>
<tr>
<td>Desirable behavior in the use of IT</td>
<td>Those behaviors in the use of IT required to achieve outcomes defined by business goals; e.g., cost lowering, customer data sharing, or the stimulation of innovation.</td>
</tr>
<tr>
<td>Clarity of accountability and responsibility in mid-operational levels</td>
<td>Clearly articulating who is responsible for what and who is to be held accountable for what in mid-operational levels of the organization to achieve improved transparency and accountability.</td>
</tr>
<tr>
<td>Applicability of mechanisms (according to Korac-Kakabadse and Kakabadse, 2001)</td>
<td>Well-designed means of implementing the IT Governance arrangements that lead IT managers and suppliers to assemble business–IT integrated plans, assign responsibilities and accountabilities, define IT priorities, consider business needs, and measure and monitor their performance.</td>
</tr>
</tbody>
</table>
4.4.3 Findings and Proposition Formulation

4.4.4.1 The Process Perspective and Applicability of IT Governance Mechanisms

As defined in Table 4.2, applicability of mechanisms is the “well-designed means of implementing the IT Governance arrangements that lead IT managers and suppliers to assemble business–IT integrated plans, assign responsibilities and accountabilities, define IT priorities, consider business needs, and measure and monitor their performance”. The mechanisms (that is, the ways and means) for making IT-related decisions (the ‘How’ dimension) need to be understood and supported across the enterprise. With effective IT Governance capabilities in place, only IT projects that support business goals and are likely to achieve success will be undertaken and assigned resources (Broadbent and Kitzis, 2005). This means that more applicable mechanisms are implemented across the enterprise. Some mechanisms (the ‘How’ dimension) deal with several types of decisions, for example, the executive committee who makes principal decisions and certain investment decisions; and some mechanisms deal with mainly one type of decision, for example, the architecture committee who makes architecture decisions (Weill and Ross, 2004). Since the ‘How’ dimension is so important to implementing applicable IT Governance mechanisms:

*Proposition 4.1:* A clear Process Perspective (‘How’ dimension) in effective IT Governance capabilities will lead to more applicable IT Governance mechanisms.

Korac-Kakabadse and Kakabadse (2001) claim that a) guaranteeing that IT supports business objectives, b) making the best use of investments made in IT, and c) evaluating IT-related risks and opportunities properly are the outcomes of effective IT Governance that occur through applicable mechanisms. Mechanisms such as approving resource-allocation decisions, applying IS/IT skills, guaranteeing security, guaranteeing reliability of strategic information, protecting IT investments, applying proper safeguards to the corporation's information assets, reacting appropriately against monopolistic manners of IS/IT providers, and finally, activating IS/IT ethical standards are pertinent considerations in the model (Korac-Kakabadse and Kakabadse, 2001; Van Grembergen, De Haes and Guldentops, 2004). The insight above is summarized below:
*Proposition 4.2*: Applicability of IT Governance mechanisms will assist in employing effective IT Governance capabilities, which in turn will indirectly lead to more business value returned from IT investments.

**4.4.3.2 The Content Perspective and Desirable Behavior in the Use of IT**

As defined in Table 4.2, desirable behavior in the use of IT is “the behaviors in the use of IT required to achieve outcomes defined by business goals”. This concept comes from Weill and Ross (2004) and Broadbent and Kitzis (2005). They all argue that effective IT Governance leads to desirable behavior in the use of IT. Weill and Ross (2004) believe that from an IT Governance perspective, enterprise strategy is a group of clear, concise statements (the ‘What’ dimension) clarifying the enterprise’s strategic goals. These statements express an agreed upon strategy that can be easily communicated. The attention of all employees is focused on simple and achievable messages through strategy, whether or not the employees are part of the strategy-making process. Usually, strategy statements articulate one or more of the following: relationships among business units, competitive thrust of the enterprise, and objectives for the role and management of information and IT. The enterprise strategy and organization provide the direction for desirable behavior (Weill and Ross, 2004).

Eventually IT Governance constructs the basis for behaviors like cost lowering, customer data sharing, or the stimulation of innovation. The encouragement of these activities is important. Good governance helps to ensure that actions taken by individuals and groups throughout the enterprise will be consistent with the goals of the enterprise (Broadbent and Kitzis, 2005). As it is the ‘What’ dimension of the IT Governance framework that identifies clear concise strategies, we argue that if the strategy and what the business-IT decision is about (the ‘What’ dimension) are clear, this will lead to more focused attention of all employees and consequently behaviors leading to desired outcomes. Therefore:

*Proposition 4.3*: A clear Content Perspective (‘What’ dimension) in the capabilities of effective IT Governance will lead to more desirable behavior in the use of IT.
Weill and Ross’s (2004) definition of governance—“specifying the decision rights and accountability framework to encourage desirable behavior in the use of IT”—does not include strategy. Instead, desirable behaviors of the people in the enterprise are the focus. They claim business value is created by behaviors, not strategy. To achieve performance goals, desirable behaviors must be in harmony with strategic direction (Weill and Ross, 2004; Van Grembergen, De Haes and Guldentops, 2004). Since desirable behavior in the use of IT is so important in this relationship:

**Proposition 4.4:** Desirable behavior in the use of IT will help effective IT Governance capabilities indirectly lead to greater business value returned from IT investments.

Although Weill and Ross (2004) provide a complex model explaining how effective IT Governance leads to desirable behavior in the use of IT, their explanation of how and why this desirable behavior leads to business value is not clear. We argue that although desirable behavior plays an important role in achieving business value, it is not the only cause. Desirable behavior helps effective IT Governance to lead to business value (Simonsson and Johnson, 2006). It is proposed that desirable behavior on its own cannot necessarily lead to business value if the enterprise does not have applicable mechanisms in place, or the responsibilities and accountabilities are not clear at mid-operational levels.

**4.4.3.3 The Actor Perspective and Clarity of Accountability and Responsibility in Mid-Operational Levels**

As defined in Table 4.2, clarity of accountability and responsibility in mid-operational levels means “clearly articulating who is responsible for what and who is to be held accountable for what in mid-operational levels of the organization to achieve improved transparency and accountability”. As discussed previously, Broadbent and Kitzis (2005) argue that effective IT Governance builds trust in the leadership by making IT-related decisions transparent. True capability for integrating business and IT can exist only when clear and strong systems of IT Governance exist. Nothing can reduce action to slow progress as fast as doubt about “**who decides what and who’s responsible for what**” (the ‘Who’ dimension). Effective synchronization of IT strategy with business context is achieved with good IT Governance (Broadbent and Kitzis, 2005). Both the differentiation and integration of IT decision-making
across business and IT in mid-operational levels of the organization are the results of effective IT Governance architectures (Peterson, 2004). Good governance design requires measurement and accountabilities. Clarity, ownership, and tools to assess IT Governance performance are provided by articulating who is responsible for what (Weill and Ross, 2004). Since the ‘Who’ dimension is so important in developing clearer accountability and responsibility in mid-operational levels, the following can be concluded:

*Proposition 4.5:* A clear Actor Perspective (‘Who’ dimension) in effective IT Governance capabilities will lead to greater clarity in accountability and responsibility in mid-operational levels.

Peterson (2004) argues that IT Governance’s structural, process, and relational capabilities direct and coordinate versatile actions related to the planning, arrangement, and control of IT. Both the allocation of formal IT decision-making authority and the coordination of IT decision-making expertise in mid-operational levels (Schlosser and Wagner, 2011) are required to eventually develop organizationally valued skill sets (business and IT), gain improved understanding of business needs, and align strategic IT investments with the business strategic objectives (Peterson, 2004). However, Peterson’s model does not explain in detail how the direct outcomes of effective IT Governance are achieved. This insight may be concluded as the following:

*Proposition 4.6:* Clarity of accountability and responsibility in mid-operational levels will in turn help effective IT Governance capabilities indirectly lead to greater business value returned from IT investments.
4.4.3.4 Effective IT Governance Leads to Business Value from IT Investments

As previously stated, Weill and Ross (2004) claim that effective IT Governance is the single most important predictor of the value that organizations generate from IT. Clear objectives in each decision domain (the ‘What’ dimension) help IT Governance to be more effective and improve the enterprise’s performance at several points (Tallon et al., 2001). Identifying who makes business-IT related decisions and who is accountable for what in each decision area (the ‘Who’ dimension) is the first step in designing IT Governance (Weill and Ross, 2004). The ‘What’ dimension may also affect the approaches an enterprise selects in the ‘Who’ dimension. According to the literature (Broadbent and Kitzis, 2005; Lazic et al., 2011; Van Grembergen, 2000; Weill and Woodham, 2003), the procedures and means of implementing IT Governance mechanisms (the ‘How’ dimension) are ultimately critical in making the IT Governance more effective.

Each of the three IT Governance capability dimensions is embedded in a chain of cause and effect logic that connects effective IT Governance to organizational benefits, and which explains the process for transforming intangible assets into the claimed benefits discussed above. Clear objectives in each decision domain (the ‘What’ dimension) place strategy and vision at the top of management’s agenda and proactively create an agreed upon set of objectives among people in an enterprise. This is so that those people will buy in and adopt whatever behaviors and take whatever actions are required to achieve these goals. The decisions resulting from IT Governance arrangements that have carefully considered the three dimensions will direct people in the enterprise towards the overall vision, and will support or oblige mid-operational managers to concentrate on the handful of applicable mechanisms that are most critical. The right business-IT decision-makers (the ‘Who’ dimension) know what the end result should be if they follow clear objectives in each decision domain, so the enterprise’s objective, accountabilities and responsibilities cascade down through the enterprise as a result of well-designed mechanisms. This leads to true capability in integrating business and IT alignment, which is the result of implementing applicable and well-designed mechanisms across the enterprise (the ‘How’ dimension). Once the right people come together through proper business-IT decision-making mechanisms, it is more likely that programs which are more aligned to business objectives will be prioritized and supported in IT investments.
Therefore, the investments made in IT will be better protected and better aligned to the enterprise’s ultimate business goals. Well-designed mechanisms, such as allocating resource decisions and applying IS/IT development audits and security policies, help to take advantage of current business opportunities, mitigate the risks of potential threats, and safeguard the intangible information assets of the enterprise (Korac-Kakabadse and Kakabadse, 2001).

To summarize, IT Governance capability arrangements that have carefully considered 1) What the business-IT decision is about, 2) Who makes the decision and is to be held accountable for what aspects of the decision, and 3) How the decision-making processes are to be implemented will lead to greater business value than IT Governance structures in which all three choices have not been considered. As explained above and represented in Figure 4.8, carefully considering each of these three outcomes will lead to the three mediators of the relationship between effective IT Governance and the business value from IT. The ideas discussed above may be summarized as follows:

**Proposition 4.7:** The outcomes of effective IT Governance capabilities lead to greater business value from IT investments when they are properly addressed together: that is, only if a) desirable behaviors in the use of IT are developed, b) accountability and responsibility in mid-operational levels are clarified, and c) applicable IT Governance mechanisms are in place.
4.5 Chapter Summary

Effective IT Governance capabilities, which harmonize desirable behavior in the use of IT with the enterprise's strategic direction, appear to be the single most significant predictor of the value that organizations can generate from IT. In addition, they appear to clarify accountabilities and responsibilities, which lead to actual capability in integrating business and IT. IT Governance’s structural, process, and relational skills direct and coordinate the versatile actions related to the planning, arrangement, and control of IT. These skills comprise the resources that facilitate the production of outcomes from effective IT Governance mechanisms. However, the different forms of IT Governance models employed and their associated variables may influence the quality of IT Governance, and thus vary the kind of resources required.

Figure 4.9 presents a graphic illustration of the effective IT Governance model employed in this study. It illustrates the link between effective IT Governance and business value, and separates the different capabilities/resources required by each of the three pathways to generate business value from IT investments.

Figure 4.9: Theoretical Model: Effective IT Governance Business Value (EITGBV) Model
In response to uncertainty about how and why the capabilities of effective IT Governance lead to its claimed business benefits, this chapter has provided an explanation in a synthesized model. This model explains how and why the mechanisms of effective IT Governance lead to greater organizational benefits. The theoretical model is based on three pathways from Effective IT Governance to Business Value (EITGBV), presented in Figure 4.9 above, with each pathway requiring a unique set of capabilities in order to actuate.

In order to clarify how this conceptual study contributes to the existing research, this chapter has synthesized the best-known literature to provide a better understanding of the mechanisms via which effective IT Governance capabilities result in greater benefits for an organization. A new integrative model, EITGBV, has been presented in this chapter as well as seven propositions that were developed from a synthesis of prior explanatory models. This study has argued that a) the new integrated model is more comprehensive than previous explanatory models, because it encompasses all three IT Governance capability dimensions discussed in the reviewed literature (Content, Actor and Process); b) the EITGBV model is not complex, but rather offers a simple definition and is more parsimonious in comparison to previous models; and c) as the detailed explanation above shows, although complex explanations have been provided by other authors, it is obvious that this EITGBV model is a better fit to this particular research than the existing ones.
5 STUDY 2 — PHENOMENOLOGICAL INQUIRY OF HOW EFFECTIVE IT GOVERNANCE LEADS TO BUSINESS VALUE - INDIVIDUAL’S PERSPECTIVE

5.1 Chapter Introduction

This chapter presents a phenomenological study that explores senior executives’ and managers’ perspectives on IT Governance practices. In this chapter, the contextual background of the semi-structured interviews is discussed and the findings of the individual interviews are described. The interviews represent individuals’ perceptions of IT Governance practices in enterprises with over five hundred million dollars in revenue per year.

Participant Selection is explained, including details on its process, preliminary considerations, population and the parameters for interview selection.

Next, the Data Collection section describes how data was collected in this study. This section provides an explanation of methods and processes, how the semi-structured interviews were conducted, the interviewees’ backgrounds, and the use of field notes and documentation. The next section, Data Analysis, explores how data were analyzed, compiled and disassembled. Subsequently, the reliability and validity of the research is described. Finally, the Findings section explores the findings of the collected data, and describes the perceptions of individuals involved in IT Governance arrangements from different elements and procedural stages of IT Governance practices. These are identified as Externalities, Conception, Conclusion and Outcome. The propositions are also developed in this section. The structure of this chapter is presented in Figure 5.1 below.
Chapter 5 – Phenomenological Inquiry

Figure 5.1: Structure of Chapter 5 – Phenomenological Inquiry
5.2 Participant Selection

5.2.1 Preliminary Considerations

Selecting interviewees is a crucial decision-making process for researchers conducting a qualitative study. Some of the primary considerations for selecting interviewees in this study were determining the number of interviews necessary and the method for selecting each individual interviewee (Baker, Edwards and Doidge, 2012). Since “surprisingly there is a paucity of explicit discussion of this basic issue for qualitative researchers in general student text books” (Baker, Edwards and Doidge, 2012, p.3), “there is quite a lot of variety in what is believed to be the minimum requirement” (Bryman 2012, p.18), and “there is no rule of thumb” (Brannen and Collard, 1982, p.16) for the number of interviews, the author will first explore the existing debate in the literature before outlining the approach taken in this study.

As argued by Patton, “the validity, meaningfulness and insights generated from qualitative inquiry have more to do with the information-richness [...] than with sample size” (1990, p. 185). The richness of information that any number of interviews can provide is “considered fundamental” (Perry, 1998, p. 793), and seems to be the most appropriate approach when deciding the number of interviews. The “quality of the analysis and the dignity, care and time taken to analyze interviews, rather than quantity”, builds a “convincing analytical narrative based on ‘richness, complexity and detail’ rather than on statistical logic” (Baker, Edwards and Doidge, 2012, p.29). The information richness will eventually provide researchers with assurance in their analytical generalizations (Miles and Huberman, 1994). When “the point of redundancy” (Lincoln and Guba, 1985, p. 204) or “theoretical saturation” (Eisenhardt, 1989; Gummesson, 1991, p. 85), is reached, information richness is achieved. Once the researcher believes that any further interviews would not disclose any new findings, “collecting more data becomes unnecessary when ‘saturation’ is reached in terms of the identification of new themes” (Brannen and Nilsen 2011). It is critical to understand information richness as a way to decide the number of interviews for a study.

In order to achieve information richness, it is very important to choose interviewees who are more likely to give worthy, in-depth information (Patton, 1990). Nevertheless, research methods in inductive qualitative theory building research differ significantly from quantitative approaches in deductive theory-testing research, “which is the latter’s emphasis on numbers”
(Alder and Alder 1987). Usually, in qualitative studies, significantly fewer participants are studied and researchers dive more intensely into the individuals and their surroundings in order to produce a “subjective understanding of how and why people perceive, reflect, role-take, interpret, and interact” (Alder and Alder 1998).

Considering that the intention of inductive research, such as this study, is theory-building rather than theory-testing, the selection of interviewees is not determined by concern for delegation of an overall population. Rather, it is shaped by purposive theoretical sampling that targets a conceptual inquiry, and helps to achieve information richness (Miles and Huberman, 1994; Eisenhardt, 1989; Eisenhardt and Graebner, 2007; Kuzel, 1992). Moreover, the style or theoretical underpinnings of a study extensively influences the sample size. For example, due to the very detailed analysis involved, an Interpretive Phenomenological Analysis typically requires a much smaller sample size. There is no need to produce a large amount of data for these kinds of study (Bryman 2012).

Theoretical sampling is described as a data collection strategy that results in the “most productive sample to answer the research question” (Marshall, 1996, p. 523), and it is also proposed that researchers focus on interviewees where the “process of interest is ‘transparently observable’” (Eisenhardt, 1989, p. 537). As a result, this study uses theoretical sampling to identify and choose suitable interviewees that could help to produce information richness by providing the necessary rich data.

A criterion-based theoretical sampling methodology was chosen based on the recommendation by Miles and Huberman (1994). This approach, which is based on the primary explanation of suitable parameters, assisted in monitoring the appropriate interviewees before the data collection phase, and ensured that they were all comparable (Yin, 1984). The following section describes and rationalizes the parameters that underlie the theoretical sampling of this study, while the subsequent section summarizes the actual steps of selection and sampling.
5.2.2 Parameters for Interviewee Selection

This section explains and rationalizes the actual parameters for selecting and checking the potential interviewees at the very early stages of the research. Irrelevant discrepancy is managed through this approach, which summarizes the applied restrictions so that the generalization of the findings can be achieved (Eisenhardt, 1989). The population of this study, from which the sample interviews are selected, is defined following the research objectives suggested by Eisenhardt (1989) and Miles and Huberman (1994). The parameters used to identify appropriate participants include senior and C-level executives and staff who report directly to them, who have a minimum of 15 years of experience in business IT decision-making, are involved in IT Governance arrangements, and have experience in enterprises with over five hundred million dollars in revenue per year within the Australian context. We will discuss each in turn:

Senior executives—individuals at the highest level of organizational structures, who are the ultimate decision makers in both business and IT—were considered so that a more comprehensive understanding of IT Governance arrangement could be achieved.

Another parameter was involvement and experience in IT Governance arrangements in their career history. Members of business IT decision-making arrangements, strategy and advisory groups, steering committees, investments and funding boards, and arrangements related to IT Governance were considered. Because of the nature of this study, the author focused on individuals who had considerable experience in IT Governance arrangements. Participants needed to have had experience with IT Governance so that they could comment on it in retrospect. The interviewees needed to have experience of at least one successful and/or poor IT Governance arrangement, which means that the decisions either succeeded, or they failed but were examined in retrospect. A retrospective method is appropriate especially when the interviews are used as the primary source of proof (Eisenhardt and Graebner, 2007). It is more likely that interviewees are able to remember recent IT Governance arrangements and decisions, which leads to more detailed research.

Also, following the research objectives, individuals involved in IT Governance arrangements for enterprises with over five hundred million dollars in revenue per year were considered, because large enterprises were expected to have well-developed arrangements for business IT investment decision-making.
Moreover, in order to have a holistic view, the interviewees were required to have experience with successful and unsuccessful decisions made under IT Governance arrangements.

Finally, although multi-national and international corporations were also considered, there is a limited number of empirical studies of this nature in the Australian context (Coleman and Chatfield 2011). Accordingly, and as a way in which to narrow the field of research, the study considered only the activities of organizations in the Australian context. This could also help to provide greater insight when addressing identified research gaps in this field in the Australian context (Al Omari et al., 2012).

5.2.3 Participant Selection Process

To assist the author carry out the study more effectively and efficiently, an approach recommended by Yin (2003, 2011) was followed, in which a protocol was used to support the choice and monitoring of individuals for interview. Yin recommends a research protocol as a “mental framework” (2011, p. 103), which provides a general outline of how the researcher should perform in a given scenario, but without excessive instructions for all of the possible situations that could occur during an interview (Yin, 2003, 2011). Using a research protocol for data collection can produce greater consistency in the study, increase the productivity of the researcher, and lessen the likelihood of biased data.

The research protocol included a schedule identifying key dates for data collection, instructions that described how to get access to the enterprises and individuals, and field procedures for the researcher, as recommended by Yin (2003). The research protocol also included a research invitation, a Research Project Description for the study’s potential participants, as well as information material and an Interview Protocol Questionnaire for the screening interviews. Appendices 2 and 3 contain these documents respectively. To make these documents easy to understand they were targeted at a general participant, which helps to attract audiences (Yin, 2003). It is compulsory to submit these documents in a standard format for the University of Melbourne Ethics Committee’s approval before data collection commences. This procedure is essential as it enhances the researcher’s understanding of probable ethical issues in the research project (Yin, 2011). After the University of Melbourne Ethics Committee approved the research project in September 2011, the selection and monitoring of interviewees commenced.
5.3 Data Collection

5.3.1 Overview

The procedures and techniques that were used to collect the empirical data for this study are presented in this section. Semi-structured interviews, field-notes, and documentation presented by individuals were the data collection techniques used in this study. Theory-building researchers should always combine various data collection techniques because this strengthens the “substantiation of constructs” in the evolving theory (Eisenhardt, 1989, p. 537). Yin’s (2003) principles for collecting evidence were applied by the researcher, and a research database was created comprising copies of field notes, documentation provided by the interviewees, and NVivo 10 files and folders that contained the interview transcripts and guidelines. According to Yin (2003), a research study database empowers other researchers to be able to access the raw data for verification, and therefore increases the overall trustworthiness of the research. University of Melbourne Human Ethics Committee approval requires that access to all data be restricted to the researcher and their supervisors. The following section explains how the researcher collected the data, starting with semi-structured interviews as the core source of evidence in this research.

5.3.2 Use of Semi-Structured Interviews

The mechanisms that underpin how and why effective IT Governance leads to business value are not well understood from either an organizational or an individual point of view. Although a thorough empirical examination has not been conducted, the causality relationship seems to be periodic in nature. This study therefore relied mainly on qualitative interview data, because, according to Edmondson and McManus, these are “appropriate for studying phenomena that are not well understood” (2007, p. 1155), and appropriate when the “phenomenon of interest is highly episodic” (Eisenhardt and Graebner, 2007, p. 28).

Taylor and Bogdan describe interviews as “encounters between the researcher and informants directed toward understanding informants’ perspectives on their lives, experiences, or situations as expressed in their own words” (1998, p. 88). According to Rossman and Rallis, this means that a researcher can delve “into participants’ worlds” (2003, p. 180), and “understand experiences and reconstruct events” (Rubin and Rubin, 1995, p. 3) in which the researcher did not participate. According to Yin, other benefits of interviews are that they can target the
research area topic (2003), and are beneficial when interviewees cannot be monitored directly, for instance when a study takes a retrospective view on the phenomenon under investigation (Creswell et al., 2003), which were the circumstances here.

This study used semi-structured interviews for data collection. Semi-structured interviews are founded on wide open-ended questions or ideas (May, 1997), which direct the researcher and frame each interview without constraining its course (Patton, 1990; De Ruyter and Scholl, 1998). As suggested by Healy and Perry (2000, p. 120), using an “interview protocol with probe questions based on what the researcher wants to find out” is highly recommended. Therefore, semi-structured interviews lead to consistent and rich insightful data that corresponds to an interviewee’s perception, knowledge, opinion or experience most precisely (May, 1997; Yin, 2003).

Guided by Rubin and Rubin (1995, p. 200) and De Ruyter and Scholl (1998), who confirmed that the “main questions are prepared in advance after the researcher has studied available background material or conducted preliminary interviews,” this study’s interview protocol developed questions using the existing literature, in addition to insights obtained from the screening interviews. As recommended by Coviello (2005), in order to let interviewees articulate themselves in their own words freely, the interview questions were intentionally expressed in natural language that avoided academic and technical terminology. Also, the interview questions were discussed with other researchers at The University of Melbourne who had sufficient experience in qualitative research. Consequently the questions were modified to enhance precision and clarity. Eisenhardt (1989), Harris and Sutton (1986), recommend that “adjustments can be made to data collection instruments, such as the addition of questions to an interview protocol […] which allow the researcher to probe emergent theories or to take advantage of special opportunities” (1989, p. 539). Accordingly, the development of interview questions is an element of the theory-building progression and a foundation element in theory-building research.
Senior executives from both IT and business, as well as mid-operational level managers who were heavily involved in IT Governance and business IT decision-making, were considered in the selection of participants from enterprises with more than 500 million dollars in revenue per year. Each interview lasted a minimum of one hour. The main focus was on the expertise and experiences of the participants in IT Governance and also the complexity and maturity of the IT Governance structure in their organizations. The researcher was able to establish a relationship with the participants through different official and/or unofficial actions. Also, where possible the interviews were recorded, and always with the consent of the participants. These interviews included twenty participants as the unit of analysis, who talked about their experience in their current role as well as in previous roles in other organizations. Table 5.1 represents each participant, their current organizational role, and the types of organization in which the interviewees worked.

**Table 5.1: Interviewee profiles**

<table>
<thead>
<tr>
<th>Row No.</th>
<th>Role/Title</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Senior Policy Officer</td>
<td>Education Institute</td>
</tr>
<tr>
<td>2</td>
<td>Director&lt;br&gt;IT Strategy and Planning</td>
<td>Education Institute</td>
</tr>
<tr>
<td>3</td>
<td>Manager&lt;br&gt;IT Strategy &amp; Planning</td>
<td>Education Institute</td>
</tr>
<tr>
<td>4</td>
<td>Director of Finance</td>
<td>Education Institute</td>
</tr>
<tr>
<td>5</td>
<td>Chief Information Officer</td>
<td>Education Institute</td>
</tr>
<tr>
<td>6</td>
<td>General Manager&lt;br&gt;Faculty of Medicine, Dentistry and Health Sciences</td>
<td>Education Institute</td>
</tr>
<tr>
<td>7</td>
<td>Chief Financial Officer</td>
<td>Education Institute</td>
</tr>
<tr>
<td>8</td>
<td>Dean, Chief Executive Officer</td>
<td>Education Institute</td>
</tr>
<tr>
<td>9</td>
<td>IT Manager</td>
<td>Education Institute</td>
</tr>
<tr>
<td>10</td>
<td>Non-Executive Director</td>
<td>Multiple Companies</td>
</tr>
<tr>
<td>11</td>
<td>Chief Information Security Officer</td>
<td>Courier Company</td>
</tr>
<tr>
<td>12</td>
<td>Chief Information Officer</td>
<td>Utility Company</td>
</tr>
<tr>
<td>13</td>
<td>Chief Information Officer</td>
<td>Airline Group Company</td>
</tr>
<tr>
<td>14</td>
<td>General Secretary (Chief Executive Officer)</td>
<td>State Government Department</td>
</tr>
<tr>
<td>15</td>
<td>Executive Director</td>
<td>Business Management Consulting Company</td>
</tr>
<tr>
<td>16</td>
<td>Client Director</td>
<td>Accounting-Consulting Company</td>
</tr>
<tr>
<td>17</td>
<td>Head of Chief Technology Office</td>
<td>Bank</td>
</tr>
<tr>
<td>18</td>
<td>Chief Executive</td>
<td>ICT government shared service company</td>
</tr>
<tr>
<td>19</td>
<td>Vice President</td>
<td>Multinational IT Services Corporation</td>
</tr>
<tr>
<td>20</td>
<td>Chief Operating Officer-Technology</td>
<td>Bank</td>
</tr>
</tbody>
</table>
This method was necessitated by the restrictions associated with interviewing. For instance, participants may respond to gratify the researcher, and the interviewee’s memory can be biased as well. The recommendation by Eisenhardt and Graebner was considered in “using numerous and highly knowledgeable informants who view the focal phenomenon from diverse perspectives. These informants can include organizational actors from different hierarchical levels, functional areas, groups, and geographies” (2007, p. 28). Attempts were made to limit the probable bias associated with interviewing by (1) interviewing individuals from different areas of business, and (2) interviewing participants from multiple hierarchical levels, consisting of senior executives, consultants, and members from the board of directors, senior management and executives, and project management.

5.3.3 Use of Field Notes and Documentation

In order to complement the interviews, field notes were collected (Yin, 2011). Eisenhardt (1989) believes that the overlap between data analysis and data collection is critical in theory-building, and that it can be achieved by using field notes. According to Eisenhardt’s suggestion (1989), notes were taken during and immediately after each interview, and immediately after visiting each organization. As Eisenhardt (1989, p. 539) says, “it is often difficult to know what will and will not be useful in the future”, so this procedure attempts to document a comprehensive reflection of events. Also, fuller field notes were typically produced based on the initial field notes and were recorded in an electronic format, which were subsequently moved to the research database for analysis in accordance with recommendations by Yin (2011). Moreover, documents such as strategic plans, project plans, lists of team-members, templates, and commercial information material were collected by the researcher, which “can strengthen a study with a small number of interviews” (Charmaz 2006).
5.4 Data Analysis

5.4.1 Overview

According to Yin (1984, p. 5) data analysis consists of “categorizing, tabulating, or otherwise recombining the evidence, to address the initial propositions of a study”. Also, it is believed that the “choices of […] research questions, of samples […] is an essential part of data analysis” (Miles and Huberman, 1994, p. 430), and so that collecting and analyzing the data in qualitative research extends throughout the study. Thus, the researcher can correct initial errors and adjust research instruments, such as the interview protocol, in order to align them with emerging themes. Eisenhardt and Graebner state that this procedure is essential to theory-building (Eisenhardt and Graebner, 2007, p. 25). Although the researcher applied these guiding principles, it must be noted that once theoretical saturation was achieved in the interview phase, after twenty interviews with senior executives and participants involved in IT Governance arrangements, the analysis continued. This process complied with Miles and Huberman, who state that there are “no fixed boundaries separating ‘interim’ analysis, later analysis, or indeed final analysis” (1994, p. 432). Ultimately, the analysis of the qualitative data in this study was rooted in guidelines and procedures recommended by Eisenhardt (1989), Miles and Huberman (1994) and Yin (2011).

First, each interview was analyzed independently, which helped the researcher to understand all of the constructs before patterns could be generalized (Eisenhardt, 1989; Miles and Huberman, 1994). Yin’s (2011) three phases of compiling, disassembling and reassembling were used to prepare the individual interview’s analysis. Consequently, the disassembling and reassembling stages included the analytical phases of interpreting and concluding.

5.4.2 Compiling Data

Compiling data was the first stage of analysis in this study (Yin, 2011). The main purpose of this stage was to categorize the qualitative data in a systematic way, which results in “stronger analyses and ultimately […] more rigorous qualitative research” (Yin, 2011, p. 182). Using the case study database, as well as highly recommended Computer Assisted Qualitative Data Analysis (CAQDAS) software NVivo 10 (Yin, 2011, Richards, 2002, Miles and Huberman, 1994; Richards and Richards, 1994), helped to achieve this core objective.
As advised by Yin, the qualitative data was also “cleaned” and “verified” (Yin, 2011, p. 182) by listening to the interview recordings as well as re-reading the field notes several times. The verbatim principle (Spradley, 1979) was used in transcribing the interviews, in so doing capturing the “exact terminology, colloquialisms, and labels used by those being interviewed” (Yin, 2011, p. 159). At the end, in order to attain an overall level of consistency (Yin, 2011) and enhanced readability of the data, formatting techniques were applied: for example, field notes and transcripts were formatted using the same line spacing, margins and font. The analytical procedures applied during the compiling stage are summarized in Table 5.2 below.

Table 5.2: Summary of Analytical Procedures used for Data Compilation

<table>
<thead>
<tr>
<th>Analytical Procedures used for Data Compilation</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of NVivo software</td>
<td>Presents structure, avoids loss of data</td>
</tr>
<tr>
<td>Use of case study database</td>
<td>Presents multiple capabilities, avoids loss of data</td>
</tr>
<tr>
<td>Listening to interview recordings up to 10 times</td>
<td>Enables understanding and confirmation of data, identifies insights and unique characteristics in data</td>
</tr>
<tr>
<td>Repeatedly re-reading field notes and interview transcripts</td>
<td>Enables understanding and confirmation of data, identifies insights and unique characteristics in data</td>
</tr>
<tr>
<td>Notes and transcripts formatting</td>
<td>Enhances consistency, readability and clearness</td>
</tr>
</tbody>
</table>
5.4.3 **Disassembling Data**

Disassembling the compiled data into individual fragments occurs in the second analytical stage (Yin, 2011). According to Yin, there is “no fixed routine” (Yin, 2011, p. 186) for disassembling data, so the recommendations by Yin (2011) as well as Miles and Huberman (1994) were applied, including the analytical methods of contact summary sheets, coding and memoing. These are explained in detail below.

A contact summary sheet is a “single sheet with some focusing or summarizing questions about a particular field contact” (Miles and Huberman, 1994, p. 5). Major themes, challenges, and insights are identified in contact summary sheets, which are obtained from a field contact like an interview. In this study, the main findings and insights obtained from each interview were summarized by the researcher in a template, which noticeably supported the development and improvement of the preliminary set of codes (Miles and Huberman, 1994; Yin, 2011). According to Miles and Huberman, “coding is analysis” (1994, p. 56) and requires “assigning new label[s] or codes to selected words, phrases, or other chunks of data” (Yin, 2011, p. 187). Also, coding facilitates “moving methodologically to a slightly higher conceptual level” (Yin, 2011, p. 187). In other words, coding is a course of abstraction and produces new data-driven concepts or groupings (Holton, 2007), which ultimately result in the development of a new theory (Bazeley, 2007).

Miles and Huberman state that individual codes normally “range from the descriptive to the inferential” (1994, p. 58). Individual codes are abstract demonstrations of phenomena (Strauss and Corbin, 1990). Codes present a chance to recover, arrange, and assign labels and meaning to raw data: for example, texts in an interview transcript (Miles and Huberman, 1994).

The coding technique recommended by Miles and Huberman (1994) was implemented, which differentiated between descriptive, interpretive, and pattern codes. At first, descriptive codes were used in the disassembling stage. This initial phase of coding was carried out by “summarizing segments of data” (Miles and Huberman, 1994, p. 69). The author initially assigned a descriptive “class of phenomena to a segment of text” (Miles and Huberman, 1994, p. 57) to the descriptive codes in this procedure, which were based on the data. The expressions presented by interviewees were utilized, which led to descriptive “categories and their properties” (Strauss and Corbin, 1998, p. 143).
Finally, what helped the process of theory-building drastically was memoing (Yin, 2011; Charmaz, 2006; Miles and Huberman, 1994). According to Glaser (1978, p. 83), memos are a “theorizing write-up of ideas about codes and their relationships as they strike the analyst while coding”, while Yin defines them as “a set of notes specifically dedicated to a qualitative researcher’s ongoing ideas during the coding of qualitative data” (2011, p. 310). Basically, the progress of coding is tracked by memos, which assist in recognizing preliminary relationships among codes, as well as categories or themes that emerge in the data (Yin, 2011). Memos correspond to the “core stage in the process of generating theory” (Glaser, 1978, p. 83) and the “methodological link, the distillation process, through which the researcher transforms data into theory” (Lempert, 2007, p. 245). Additionally, memos “are one of the most useful and powerful sense-making tools at hand” (Miles and Huberman, 1994, p. 72). According to Miles and Huberman, memos are therefore conceptual, and concentrate on the interpretation rather than the reporting of data (1994). Coding and memoing were done at the same time during this study. Especially after the initial codes were developed and partially refined, memoing helped considerably to progress from “empirical data to a conceptual level” (Miles and Huberman, 1994, p. 74). This was vital to the study, as the emergence of key categories and their relationships resulted in an “integrated understanding of events, processes, and interaction in the case” (Miles and Huberman, 1994, p. 74). The analytical methods used in this study during the disassembling stage are summarized in Table 5.3.

**Table 5.3: Summary of Analytical Procedures used for Data Disassembling**

<table>
<thead>
<tr>
<th>Analytical Procedures used for Disassembling stage</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memoing</td>
<td>The ideas of the researcher are described and structured by this sense-making approach; the researcher identifies preliminary relationships among themes and codes in the data, the coding progress is tracked, and data is transformed into theory.</td>
</tr>
<tr>
<td>Descriptive Coding</td>
<td>By developing and using initial categories, data are explained and reviewed.</td>
</tr>
<tr>
<td>Contact Summary Sheet</td>
<td>The main findings and insights for each participant are summarized, which helps in developing codes.</td>
</tr>
</tbody>
</table>
5.4.4 Reassembling Data

According to Yin (2011, p. 179), reassembling intends to “reorganize the disassembled fragments or pieces into different groupings and sequences”, so as to discover more abstract themes that will form the basis for additional interpretation and conclusion. Following Miles and Huberman’s approach, in order to reassemble emerging groups with “propositions about their relationships” (Pace, 2004, p. 338), the analytical procedures of memoing, and interpretive and pattern codes (Miles and Huberman, 1994) were used. Interpretive codes can be understood as ways to combine descriptive codes into more general categories and subcategories (Urquhart, 2007) and are considered to be more complicated than descriptive codes (Miles and Huberman, 1994). On the other hand, codes that “identify an emergent theme, configuration, or explanation” are known as pattern codes (Miles and Huberman, 1994, p. 69). They combine interpretive codes into more meaningful and economical units of analysis: they are “meta code” (Miles and Huberman, 1994, p. 69). In this study, directional procedures correspond to the emerging relationships between individual categories that were recognized in the course of interpretive and pattern coding. As it did in the descriptive stage, memoing also helped considerably with the process of interpretive and pattern coding. In particular, memoing was helpful during identification of the links between categories, which corresponded to emerging themes throughout the data analysis.

Table 5.4: Summary of Analytical Procedures used for Data Reassembling

<table>
<thead>
<tr>
<th>Analytical Procedures used for Data Compilation</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interpretive coding</td>
<td>Categories are developed and descriptive codes are summarized.</td>
</tr>
<tr>
<td>Pattern coding</td>
<td>Main data code categories and relationships are recognized.</td>
</tr>
<tr>
<td>Memoing</td>
<td>The ideas of the researcher are described and structured by this sense-making approach; the researcher identifies preliminary relationships among themes and codes in the data, the coding progress is tracked, and data is transformed into theory.</td>
</tr>
</tbody>
</table>
5.5 Findings

5.5.1 Overview

The objective of this study was to identify, from the perspective of individual actors involved in IT Governance arrangements, the mechanisms by which effective IT Governance contributes to delivering business value. This section explains the findings of this phenomenological study. The findings show that, from the perspective of individual actors involved in IT Governance, IT Governance practices consist of a preliminary element of Externalities followed by the three procedural stages of Conception, Conclusion and Outcome. Each area contains constructs that are related to each other or to an in-between construct. The relationship between key constructs is presented by a proposition, as suggested by Colquitt and Zapata-Phelan (2007).

5.5.2 Externalities

The first major element that emerged from the data was the Externalities. Externalities are external factors that influence the decisions and behavior of actors involved in IT Governance practices. The term externalities used here is completely different from what is used in economics concept “where the action of one agent brings about an inadvertent gain or loss to another without payment or compensation (Fisher et al., 2009). The findings of this study show that Externalities consist of four constructs that influence the practices of IT Governance and ultimately influence the vision, which sets the Actor Agenda. They include Customer/Market Demands, Technology Progress, Regulatory Demands and Defined Business Needs. The Actor Agenda is one of the main constructs that emerged from the data, which links the Externalities with the Conception procedural phases in practices of IT Governance. Actors are individuals who are involved in IT Governance decision-making arrangements, and the Actor Agenda is the agenda of these individuals, which in turn is determined by their vision. In other words, this vision shapes the Actor Agenda. This study’s findings demonstrate the factors that influence the vision of individual Actors involved in decision-making before decisions are made.

5.5.2.1 Customer / Market Demands

The first construct to emerge from the Externalities is Customer/Market Demand. Customer/Market Demands are the requirements introduced by customers or the market. The findings suggest that this concept speaks to an understanding of mechanisms that participants
believe must be in place for successful IT Governance to occur. Participants approached the vision—which shapes the Actor Agenda, and is influenced by Customer/Market Demands—as a possibility and an opportunity that allows for soundness and trust in future business ventures. The Chief Information Security Officer of a large courier enterprise, Participant 11, identified the vision of their organization as “very much customer-centric.” In this way, all projects and aspects of projects are viewed through that lens:

“We are very conscious of using terms like customer stories, customer journeys, and getting direct feedback around the user interface design that actually leads to a better customer experience.” [Participant 11]

The participants emphasized the importance of vision in IT Governance that is driven by Customer/Market Demands, arguing that either a lack of such vision, or the communication of a cohesive and consistent vision, can affect the success of governance. Frequently, participants noted the challenges of not having a unified top-down vision. Such vision leads to a uniformity of action, and ideally, outcomes. This vision is shaped by customer and market demands. This study proposes that:

*Proposition 5.1*: Customer/Market Demands shape the Actor Agenda by providing actors with a better understanding of the external environment in which they operate.

5.5.2.2 Technology Progress

The second construct that emerged from the Externalities procedural stage is Technology Progress. Participants pointed specifically to the way in which Technology Progress influences the vision that sets their agenda, which in turn allows an organization to innovate and take risks in the future without knowing the outcome. The Client Director of a large Accounting-Consulting Company, Participant 16 used the example of Apple to demonstrate the role of vision:

“When Apple first put out the iPad—that was a big risk, right? [...] They would have had no data on tablet take up and so forth. When you are innovating, that becomes challenging to make those sorts of decisions. That’s
where you’ve got to have a steering committee that buys into the vision and they are prepared to take a bit of a leap of faith.” [Participant 16]

The Senior Policy Officer of a large university, Participant 1, noted that Technology Progress created a lack of understanding for actors, which affected project choice and project management. The participant gives an example about wireless coverage:

“Because the vision of the top figure executives is not one of detail, we need much better coverage. That’s fine. They never used the wireless service so they didn't understand its limitations and they didn't understand that these things were coming.” [Participant 1]

Technology Progress is an external factor that influences the Actor Agenda, because it provides actors with a better understanding of potential organizational innovation opportunities and assures alignment, in terms of technology aiding in achieving business goals. This study found that Technology Progress helps organizations to take steps towards future organizational innovation opportunities even when the outcome is not completely clear. So, it is proposed that:

Proposition 5.2: Technology Progress shapes the Actor Agenda by providing actors with a better understanding of potential future organizational innovation opportunities.

5.5.2.3 Regulatory Demands

Regulatory Demands was another construct extracted from the Externalities procedural stage. Regulatory Demands are policies and procedures outlined by the external environment and which affect the Actor Agenda. Participant 18, the Chief Executive Officer of an ICT government shared service company, said:

“Then we will go through a whole bunch of compliance and standards issues, so that it fits our enterprise architecture, fits all of government, accessibility standards, it fits that, this and the other.” [Participant 18]

This study found that Regulatory Demands can operate at different levels. Rules and regulations with which an enterprise needs to comply could be at an international, national or state level. For example, in the case of an international enterprise, there are global service level
agreements as well as local regulatory requirements for each country. As the Chief Information Officer of a major global Airline group, Participant 13, said:

“We have a list of systems we provide the businesses. Some of them are mandated for the airlines; some are optional. So, in some cases, for example, for Singapore, we provide them with mandated only. Other [countries] have decided that they want A-AIRLINE group to do everything. .... Obviously, I have a service level agreement over those and a whole set of governance over that and managing that process.” [Participant 13]

Regardless of the level of the Regulatory Demands, they influence the vision of individual decision-makers that set the Actor Agenda. Understanding of the Regulatory Demands can help in shaping the correct vision, which allows for cohesion. So we propose:

*Proposition 5.3:* Regulatory Demands shape the Actor Agenda by defining the set of rules and regulations that actors operate under while making IT Governance decisions.

### 5.5.2.4 Defined Business Needs

The last construct that emerged from the Externalities procedural stage is Defined Business Needs. The Actor Agenda is influenced by what the business requirements are and what the roadmap is to get there. There is a difference between what a business needs and what a business wants. The Vice President of a multinational IT services corporation, Participant 19, described the need for a “road map” for deciding on projects, as a way to align the vision based on what the business actually needs with projects and choices in the future:

“I had an experience with a board not too long ago...I said, ‘do you have any idea of what your target architecture needs to look like? [...] At a conceptual level [business needs][...] I’ve looked at your business strategy and you’re talking about all these wonderful things, but I don’t see any road map to the future that reflects the initiatives you have to do to get from point A to point B?’” [Participant 19]
The Chief Information Officer of a major utility enterprise, Participant 12, concurred, noting that projects should be approached according to their fit with the vision that is set by the organization’s true needs. The challenges of having different or conflicting visions can change organizations. This study found that better outcomes could be achieved with visions that are the result of clearly defined business needs. So, this study proposes that:

*Proposition 5.4:* Clearly defined business needs influence the Actor Agenda by providing a clear and consistent organizational framework that actors operate under while making IT Governance decisions.

### 5.5.3 Conception

After the Externalities stage, Conception is the first procedural stage identified in the data on IT Governance practices where the perceived collective business needs are shaped by decision-makers. The Actor Agenda follows two paths of Consultation and/or Inception after it is influenced by Externalities. Both paths will ultimately form Perceived Collective Business Needs. Based on the Perceived Collective Business Needs, decision-makers will eventually look at Alternative Decisions. Constructs in this section include Consultation, Inception, Perceived Collective Business Needs and Alternative Decisions.

Participants in this study were both aware of and able to describe what they had perceived in the Conception procedural stage in their organization. For these participants, however, the IT Governance arrangement was fundamentally defined by the people involved in decision-making, including those who provided input into the decisions. While participants occasionally described the mechanisms by which these decisions were made, their focus—and therefore their understanding of that arrangement—was person-based.

The Alternative Decisions construct links the Conception and Conclusion procedural phases in Practices of IT Governance. This study’s findings show that, before the actual decision is made, decision-makers’ choices between multiple decision options are influenced by their Perceived Collective Business Needs, which are shaped through either Consultation or Inception.
5.5.3.1 Consultation

The first construct to emerge from the Conception procedural phase is Consultation. The findings suggest that this concept is about the formal ways of getting advice from internal or external consultation practices through consultants, user groups, committees or advisory groups. Participants noted that IT Governance Practice generally involved multiple committees and people, which leads to Perceived Collective Business Needs. Different committees handle different aspects of IT. The Chief Financial Officer of a large university, Participant 7, described a streamlined committee system, involving HR, finance, and IT, all of which were affected by the decisions of such governance. The Chief Information Officer of a large university, Participant 5, echoed these sentiments, noting that:

“There are three broad groups that have carried the different types of IT Governance at the university...based on their area of expertise. This includes the IT Strategy and Advisory Group, a group that deals with money and a group that looks after funding for IT investments.” [Participant 5]

For-profit organizations, on the other hand, often had more complex and stringent IT Governance arrangements. These frequently involved the assignation of specific roles and responsibilities, as well as restrictions on decision-making as a function of accountability and business value. As the Head of Chief Technology Office in a major bank, Participant 17, explained, there was a specific procedure that was to be followed, from conception to execution of an idea, which involved individual presentations and layers of group evaluation:

“Generally what happens is you put together a PDR (project description) that will get reviewed by the project review board and then they will approve the project or not... Then the project team takes up from there. Each project would be set out with a project group and a steering group.... So we have the forums in place.” [Participant 17]

Similarly, the Chief Information Security Officer of a large courier enterprise, Participant 11, described a formal protocol of IT Governance, which involved evaluations; multiple committees, depending on the need for expertise, and the assignation of decision-making power premised on the scope and magnitude of the project:
‘We have within our organization formal programs of work...Every project has some sort of steering committee.... We always work out who needs to be a part of that steering committee. Projects above a certain size always go up to our executive management.... In other cases, we will have a joint business and technology steering committee. ... recommendations to the formal steering committee, so [there are] multiple layers of that formal governance and steering committees and groups.” [Participant 11]

Through all of these mechanisms for consultation, individuals’ Perceived Collective Business Needs will be brought together, which helps decision-makers to understand requirements, regulate deliverables and remain accountable. So this study proposes:

Proposition 5.5: Consultation is a transparent and formal process that provides input into IT Governance decision-making by defining requirements, deliverables, and accountabilities.

5.5.3.2 Inception

Inception was another construct extracted from the Conception procedural phase. In contrast to Consultation, Inception is where individuals’ Perceived Collective Business Needs are formed implicitly, well before the actual decision-making arrangement occurs. In other words, Inception happens when individuals articulate their ideas unofficially through conversations in meetings, catch-ups or social events. The findings show that this is where the power of individuals is highlighted. As the IT Strategy and Planning Director of a large university, Participant 2, said:

“I think there is a lot of conversation that happens, and I don't think there is [anything] necessarily wrong with that but a lot of conversation happening with the real decision; leading up to some of those [official] meetings with some of those groups, that really make the decision-making process in the groups more of a ratification than real decision-making... but a lot of discussion and briefing had taken place in the weeks before.” [Participant 2]
In addition, other participants focused on the challenges that arise for decision-makers during the processes of IT Governance Practices. The Chief Information Officer of a major utility enterprise, Participant 12, characterized the challenge as one stemming from the consolidation of power; as the participant described it, if one person has power, they can choose projects not based on financial decisions or other factors, but instead on personal interest:

“The first failure in most organizations, I suppose, is that the hierarchical power tends to be used to push ahead with pet projects, or projects that may not be worthy, ahead of projects that are. The person owning the worthier project does not have the power base within the organization.” [Participant 12]

As per the findings, the conversations that happen before the actual decision-making arrangements take place influence individuals’ Perceived Collective Business Needs. The data shows that organizational hierarchy influences the power of individuals. Pet projects may be approved with the support of powerful individuals through these conversations as well. So, this study proposes:

*Proposition 5.6:* Inception is a hidden and informal process that alters IT Governance decision-making by defining requirements, deliverables, and accountabilities ex-ante.

5.5.3.3 Perceived Collective Business Needs

The last construct that emerged from the Conception procedural phase was Perceived Collective Business Needs, which are the ultimate business requirements that are perceived by an individual Actor. As discussed previously, this construct is formed through either Consultation or Inception. The Chief Financial Officer of a large university, Participant 7, depicted how Perceived Collective Business Needs play a key role when identifying the reasons for making different decisions. In this case, the business need was described as follows: “the enterprise system was the Oracle system, and the release that the organization used is no longer going to be available from Oracle so you have to upgrade to the next release.” However, the Perceived Business Need brought up more questions that were not included initially:
“The question became ‘what should the extent of the upgrade be?’ If you look forward in 5 years, what [do] we think [the] organization’s business needs or fundamental business requirements for the business processes related to the enterprise systems would be, and kind of identify those or predict those and then base the system and the business process on that rather than simply doing an upgrade.” [Participant 7]

The findings show that Perceived Collective Business Needs affect the choice among multiple decision options. By considering future requirements and how business processes might be improved, the information obtained by decision-makers at this stage may bias the selection of decision alternative. So, this study proposes:

Proposition 5.7: The individual practices of Consultation and Inception constrain the available alternative decisions by altering the Perceived Collective Business Needs.

5.5.4 Conclusion

The third procedural phase of IT Governance Practices is Conclusion. The actual decision-making happens in the Conclusion realm of IT Governance Practices. This is where Alternate Decisions either get assessed or endorsed and the final decision is made. Assessment, Endorsement, Objection and Decision formulate the constructs that emerged from the Conclusion procedural phase.

Decision, a construct of the Conclusion procedural phase, is the final result of IT Governance decision-making practice. The Decision is made based on the best information available to the individual at the time. The General Manager of a Faculty of Medicine, Dentistry and Health Sciences, Participant 6, noted that decision-making ultimately resided with the senior executives, and that there was trust and confidence in those people:

“I firmly believe that a senior executive will make a decision with the best information they have available at the time.” [Participant 6]
5.5.4.1 Assessment

Assessment is another construct that emerged from the Conclusion procedural phase. The formal procedure of evaluating and making a decision through IT Governance Practices is identified as Assessment. This is where Decision Alternatives are evaluated, inputs to the decisions are presented, dependencies and inter-dependencies are considered, projects are prioritized and the actual analysis happens. Eventually, based on the evaluation process, the final decision is made. As the IT Strategy and Planning Director of a large university, Participant 2, noted:

“There are also mechanisms which [have] associated operating impact. So we take all those projects in and look at their dependencies and inter-dependencies,...but then that final list of projects that are prioritized, there are mechanisms for evaluation, prioritization mechanisms and taken to another group [...] called planning group who prioritize a project.” [Participant 2]

The research data show that, through proper assessment mechanisms, decisions with greater business benefits will be approved for funding after evaluation, prioritization and investigation have taken place. So we propose:

Proposition 5.8: Assessment is a decision-making practice that involves formal analysis, evaluation and prioritization of alternative decisions. It is more likely to occur in the Conclusion phase, if the conception phase was dominated by consultation.

5.5.4.2 Endorsement

Another construct that emerged from the Conclusion procedural phase is Endorsement. The data show that, in many cases, the actual decisions are made long before the final decision-making arrangement takes place. As the IT Strategy and Planning Director of a large university, Participant 2, said:

“They make the recommendation, the decision is ... effectively made by the senior executives ... So, until the decision is made, but there is always the aspect of, you know, where is the conversation happening with the real...
decision ... and that [senior executive] is just ratifying those decisions ... [rather] than a real decision-making." [Participant 2]

The findings show that in numerous scenarios, many conversations happen among individuals, committees and advisory groups, and the decision is almost made in those conversations. Recommendations are then given to the decision-makers about which Alternative Decisions to choose, and finally the decision makers just endorse and ratify those decisions. So, this study proposes:

**Proposition 5.9:** Endorsement is a decision-making practice that involves no assessment of Alternative Decisions. It is more likely to occur in the Conclusion phase, if the Conception phase was dominated by Inception.

### 5.5.4.3 Objection

The final construct that emerged from the Conclusion procedural phase was Objection. Objection is made when a final decision is compromising an Actor’s Perceived Collective Business Needs as they relate to a business unit. If the decision-makers do not have proper input at the time of making the original decision, an Objection to the decision may occur, which in turn may affect the ultimate decision. As the General Manager of a Faculty of Medicine, Dentistry and Health Sciences, Participant 6, said:

“If that decision is compromising what I think is the right business decision for my faculty, then we are having a conversation with ITS ... because I’m saying, ‘you want to implement your standard product in this faculty ... and I’m saying I don’t think it’s going to be the right thing for our faculty’ ... I’m fighting for what I think is right for the faculty” [Participant 6]
These decisions, which are usually made at the higher levels of an organization by senior executives, may need to be rolled-out over several years. The data show that the scope, as well as personnel, may change during the period. Also, the needs of different business units are not necessarily the same, so providing one solution for the whole enterprise may result in Objections to the decision. If ignored, conflicts will occur, which are discussed next. So we propose:

**Proposition 5.10:** Objection to decisions is more likely to arise if the IT Governance actors do not take the defined business needs into consideration.

### 5.5.5 Outcome

Once the decision is made, it may lead to Realized Benefit, where business benefits are realized as an outcome of the decision. Also, decisions may result in conflicts between different business units or a business unit and the enterprise. This section discusses the Realized Benefit and Conflict constructs.

#### 5.5.5.1 Realized Benefit

The first construct that emerged from the post-decision procedural phase of Outcome is Realized Benefit. Realized Benefit is the business benefit that was initially claimed to be the result of an Alternative Decision, and then after the decision was implemented the benefit was realized through benefit realization processes. The IT Strategy and Planning Manager of a large university, Participant 3, described the role of financial consideration through cost modeling and a cost-benefit analysis, adding:

> “Each project has a business case developed [with] documentation about what it will cost, [and] what benefits they think it will deliver.” [Participant 3]

For the Chief Information Officer of a large university, Participant 5, the financial consideration was not just cost-modeling, but also a determination of what benefits should be defined as, which added a layer of complexity to the cost-benefit analysis:
“We had, over the last 12 months, a number of discussions about what would we consider the right return on investment... So we want to have business process reports, we want to get some business improvement, productivity, and cost saving, and we have quantified them.” [Participant 5]

The findings say that, for an IT Governance practice to be considered successful, benefits need to be realized. This could be as simple as cost savings, return on investments, and quantifying risks, both financial and intangible. So this study proposes that:

**Proposition 5.11:** Benefits from IT Governance decisions are more likely to arise if the IT Governance decision-making process involved consultation, formal assessment of alternative decisions, and was influenced by a sufficient understanding of Externalities.

5.5.5.2 Conflict

The last construct that emerged from the Outcome procedural phase is Conflicts. Conflicts are disagreements and arguments between decision-makers or decision-makers and those affected by the decision. Lack of proper input into the decision could result in conflict between different business units or business units and the enterprise. The diverse needs of different business units may require different decisions for different business units. As the General Manager of a Faculty of Medicine, Dentistry and Health Sciences, Participant 6, said:

“I think that the answer is that it is not always clear. Well, I’m clear what I think we should do in the faculty, but ... [this] is contrary to the decision my senior executive is saying, so I feel conflicted in that space. What’s good for my business might not be the decisions made by the university. So, often there is a conflict around that.” [Participant 6]

**Proposition 5.12:** Conflict from IT Governance decisions is more likely to arise if the IT Governance decision-making process involved Inception, subsequent informal endorsement during the Conclusion, and avoided Externalities in the process.
Participants who responded within this construct pointed to lessons learned as a fundamental part of the IT Governance process. The way that these lessons were defined, however, varied from participant to participant. For some participants, the lessons were related to recognizing and acknowledging conflicts that occurred on one project, and applying the resulting changes to the next project. As the Head of Chief Technology Office of a major bank, Participant 17, noted:

“When we close out a project, one of [the] things we will do is, as part of a close out report, is actually document some of those decisions that have been made and highlight whether they have had a good or bad outcome, and that goes into the lessons learned, which will be filtered through to future similar projects.” [Participant 17]

The data show communication of these lessons is an integral part of successful IT Governance practices. Eventually, the lessons learned from the conflicts will provide input to the Actor Agenda for future decisions. So this study proposes that:

*Proposition 5.13:* IT Governance decision-making processes will improve over time if IT Governance actors are able to address conflicts and avoid subsequent pitfalls.
6 DISCUSSION

6.1 Chapter Introduction

This chapter gives meaning to the studies’ findings by evaluating and comparing the results against the previous findings of other researchers. The findings of both the conceptual and the phenomenological study are interpreted and described against a backdrop of the literature’s existing knowledge about this research problem. As presented in Figure 6.1, this chapter is structured in three main sections, with the first recapping the research objective as a precursor to the actual discussion of the findings. Section 6.3 discusses the findings of the conceptual study from an organizational perspective. This section discusses the Content, Actor and Process dimensions of effective IT Governance that were developed in the Effective IT Governance Business Value (EITGBV) Model. Next, Section 6.4 discusses the findings of the phenomenological study from the individual perspective. This section discusses findings related to individual perspectives on the Content, Actor and Process dimensions of effective IT Governance. Thereafter, Section 6.5 addresses the research objective and therefore summarizes the answers to the research questions.
Chapter 6 – Discussion

Figure 6.1: Structure of Chapter 6 – Discussion
6.2 Revisiting the Research Objective

The main objective of the study was to determine the influence of effective IT Governance in delivering business value from investments made in IT at both organizational and individual levels. The existing theoretical foundation to explain the link between the three dimensions of IT Governance capabilities and the creation of business value for an organization was inadequate (Brown, 2015; Buchwald, Urbach and Ahlemann, 2014). A conceptual study was therefore designed to address this inadequacy, using the three-dimensional framework of Content-Process-Actor at the organizational level. Specifically, the conceptual study pursued a sequential development of a conceptual model. The study sought to identify the conceptual links between effective IT Governance and business value, and to explain how and why the two are linked. As such, the conceptual study aimed to answer How and why do organizations generate business value from IT investments through IT Governance?

Accordingly, a literature search sought to identify and define the constructs that underpin effective IT Governance and business value, and the different formulations upon which others have linked the two previously. This required breaking down ‘effective IT Governance’ and ‘business value’ into underlying concepts, which could be defined unambiguously and employed in novel conceptual model (Venkatesh, Brown and Bala, 2013). The existing knowledge emanating from the literature search was consolidated into three pathways that were used to link effective IT Governance and business value. Each of these three pathways (Process, Content and Actor) was dedicated to addressing the ‘how’, ‘what’ or ‘who’ as linkage parameters between effective IT Governance and business value.

Also, a phenomenological study was undertaken to provide evidence from existing practices of individuals. This phenomenological study aimed at addressing the question How and why do individual actors engage in generating business value from IT investments through IT Governance? The researcher employed observations and interviews to collect data from managers and employees, using the data to extract stakeholders’ perceptions as evidence of the application of effective IT Governance capabilities in delivering business value.
The ultimate goal of the research was to build a theory that would underpin the manner in which effective IT Governance capabilities are linked to the creation of business value for an organization, at individual and organizational levels. The resulting theory would be used to justify the deployment of IT investments to ensure that an organization derived business value from its IT Governance capabilities possessed by individuals in the organization and by the organization itself.

To achieve the research goals and consequently answer the research questions, new definitions of applicable constructs were advanced, thus extending the available literature and addressing its deficiencies. For instance, the link between effective IT Governance capabilities and business value introduced a three-dimensional framework comprising the Content, Process, and Actor dimensions. The Content dimension refers to the decision domain of IT Governance, and focuses on the desirable behaviors that are pertinent for effective use of IT resources and investments. Next, the Process dimension refers to the IT Governance mechanisms domain, which is related to how IT Governance decisions are made and monitored in an organization. Finally, the Actor dimension refers to the information governance style of the actors in an organization, and clarifies who makes the decisions related to business and IT in an organization and who is accountable for which aspects of the decision. Therefore, the Actor dimension clarifies the accountability and responsibility in mid-operational levels of the organization.

6.3 Relating the Findings of the Conceptual Study to the Existing Literature

A conceptual study was undertaken to develop a new theoretical model to answer the first research question, i.e., How and why do organizations generate business value from IT investments through IT Governance? The new conceptual model illustrates the manner in which effective governance capabilities and mechanisms in IT could facilitate the attainment of business value through the what, who and how pathways: namely, the Content, the Actor and the Process dimensions. The theoretical model depicted in Figure 6.2 illustrates the link between effective IT Governance and the business value accrued by businesses from IT, and separates the different resources required by each of the three pathways. Figure 6.2’s model represents the outcomes of effective IT Governance capabilities that generate business value from IT investments.
The findings of the conceptual inquiry were condensed into seven propositions that facilitated formulation of a conceptual model. The propositions from the conceptual study are summarized in Table 6.1.

**Table 6.1. Propositions used to generate the conceptual model**

<table>
<thead>
<tr>
<th>Proposition Number</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1</td>
<td>A clear process perspective (‘How’ dimension) in effective IT Governance will lead to more applicable IT Governance mechanisms.</td>
</tr>
<tr>
<td>4.2</td>
<td>Applicability of IT Governance mechanisms will facilitate effective IT Governance capabilities to indirectly lead to more business value returned from IT investments.</td>
</tr>
<tr>
<td>4.3</td>
<td>A clear Content Perspective (‘What’ dimension) in the capabilities of effective IT Governance will lead to more desirable behavior in the use of IT.</td>
</tr>
<tr>
<td>4.4</td>
<td>Desirable behavior in the use of IT will help effective IT Governance capabilities indirectly lead to more business value returned from IT investments.</td>
</tr>
<tr>
<td>4.5</td>
<td>A clear Actor Perspective (‘Who’ dimension) in effective IT Governance capabilities will help clarify accountability and responsibility in mid-operational levels.</td>
</tr>
<tr>
<td>4.6</td>
<td>Clarity of accountability and responsibility in mid-operational levels will help effective IT Governance capabilities indirectly lead to greater business value returned from IT investments.</td>
</tr>
<tr>
<td>4.7</td>
<td>The outcomes of Effective IT Governance lead to greater business value from IT investments when they are properly addressed together: that is, only if a) desirable behaviors in the use of IT are developed, b) accountability and responsibility in mid-operational levels are properly clarified, and c) applicable IT Governance mechanisms are in place.</td>
</tr>
</tbody>
</table>
6.3.1 Relating the Findings of the Conceptual Study to the Content Perspective

The Content perspective of effective IT Governance addresses the ‘what’ aspect of the first research question. The findings from this perspective indicate that an organization’s governance structures are pertinent to its capacity to benefit from IT Governance in the creation of business value. In other words, an organization needs to have the capacity to institute structures, forms and relational mechanisms of IT Governance to enable the organization to benefit from IT investments (Peterson, 2004). However, to enable IT investments to yield business value, the mechanisms of IT Governance need to be applicable within the organization (Webb, Pollard and Ridley 2006). These mechanisms can lead to the development of desirable behaviors in the organization in the utilization of IT. Nonetheless, to be applicable in an organization and to yield the desired outcomes, IT Governance mechanisms and behaviors need to be aligned to and consistent with the mission, standards and culture of the organization (Wu, Straub and Liang, 2015).

IT Governance is supposed to provide structures in which an organization can ensure that its IT investments support business objectives and in turn deliver the desired business value (Guldentops, 2004; Weill and Ross, 2004). This requires a framework in which best practices and controls can be employed to ensure strategic integration of decisions related to IT and business (Ribbers, et al., 2002). In this light, Peterson (2003) proposed a system in which structures, procedures, decision-making and relational mechanisms were interlinked, as suggested by the findings of the study. However, it is important for IT Governance structure to be sufficiently flexible and adaptable, such that the organization can meet the changing conditions of its business environment, and considering that the current business environment is plagued by uncertainties, turbulence and fierce competition as indicated by (IT Toolkit, 2015). Therefore, the appropriateness of IT Governance structures will be reflected by the capabilities of the governance system that the organization has developed and established (Caldeira and Ward 2003). Indeed, the business practices employed in an organization are addressed by the capabilities of the firm, which are informed by the maturity level of the organization (Nicho and Khan, 2017; Tamboho and Latuperissa 2014). To this end, Fukuyama (2017) advanced the capability maturity model integration (CMMI), which underpinned his idea about an organization’s capacity for creating established procedures that will ensure the effectiveness of the firm. The CMMI addresses maturity of organizational capabilities at the levels of
value/competency measurement, communication, governance, technology scope, partnership, and skills. In the same vein, Bradley et al. (2012) asserted that the refinement of an organization’s IT Governance and business governance abilities was espoused in the components of the organization’s IT Governance mechanisms. Such mechanisms are meant to encourage the development and sustained use of desirable behaviors within the organization regarding the use of IT facilities and equipment in which the organization has invested. In line with this, Orozco, Tarhini and Tarhini (2015), Simonsson and Johnson (2006) and Weill and Ross (2004) affirmed that desirable behaviors in an organization facilitated the achievement of business value from effective IT Governance.

Unlike existing literature by Guldentops (2004), Peterson (2004), Webb, Pollard and Ridley (2006), and Weill and Ross (2004), which indicated more holistically that governance structures influence the manner in which IT Governance is practiced in organizations, the current study provided new detailed insights that explain which desirable behaviors are pivotal to make IT Governance effective. Ultimately, the findings of the conceptual study revealed that, from the Content perspective, desirable behaviors in the use of IT in an organization ensure that effective IT Governance capabilities are translated into business value.

6.3.2 Relating the Findings of the Conceptual Study to the Actor Perspective

The Actor perspective of IT Governance addresses the ‘who’ aspect of the first research question. This perspective suggests that the main actors in an organization are pertinent to the implementation of effective IT Governance and to ensuring that maximum business value is obtained from IT investments. From the findings of the conceptual inquiry, the chief executive officer (CEO), the chief information officer (CIO) and the chief financial officer (CFO) were found to be the main actors who ensured that effective IT Governance delivered business value from the IT investments that they endorsed, approved and authorized. However, although the findings of Balocco, Ciappini and Rangone (2013), Ferguson, et al. (2013) and Schobel and Denford (2013) indicated the pertinence of top level management in the management of IT resources and decision-making, they do not address the mechanisms used by these actors to arrive at the decisions that would enhance the effectiveness of IT governance, thus making this study different due to the elaboration and clarification of the involvement, roles, accountabilities and responsibilities of main actors in organizations.
Considering that the synchronization of IT strategy and business strategy depends on those who make decisions and who are tasked with different responsibilities in an organization, it is evident that an organization’s senior management holds the decision-making power and authority, and delegates responsibilities within the organization (Korac-Kakabadse and Kakabadse 2001). Senior management leaders provide the strategic direction for the organization and are therefore well positioned to champion the formulation and implementation of IT Governance frameworks. This is because, according to Benaroch and Chernobai (2017), the success of the IT investments in delivering the anticipated business value lies squarely on their desks. Senior management is the face of the organization and is therefore tasked with ensuring that the shareholders of the company derive maximum return on their investments in the organization (Drnevich and Croson 2013). Indeed, Weill and Ross (2004) affirmed that the effectiveness of IT Governance in an organization was dependent on the involvement of senior management. In this case, the chief information officer was directly tasked with leadership and management of issues related to IT in the organization based on IT expertise (Orsi, 2009). As such, the involvement of the chief information officer was paramount to ensuring that the organization’s IT Governance was well designed, implemented, and complied with by members at all levels of the organization. However, to achieve organization-wide success of IT Governance, the chief information officer needed to work collaboratively with other members of senior management. This ensured that decisions and actions relating to IT Governance had organization-wide approval from the highest level of the organizational structure. In this respect, Weill and Ross (2004) found that the active participation of an organization’s senior management in the process of IT Governance approval and performance review was important not just because it was a part of their daily duties, but also because it was instrumental to ensuring that IT investments delivered the envisioned business value.

However, IT investments can yield the desired business value only when they are strategically aligned to the goals of the organization. Therefore, organizational governance and IT Governance need to operate in tandem and in strategic alignment with the goals of the organization (Ali and Green 2005; Rahimi, Møller and Hvam 2014). In this respect, De Haes and Van Grembergen (2009) and Gordon (2013) argued that an exploratory investigation of IT Governance instruments for a superior alignment between business and IT was pertinent to ensuring that the capabilities of IT Governance were strategically aligned with the organization’s
business goals. As such, collaboration between IT and non-IT experts in the organization’s senior management helped to ensure that strategic alignment was achieved and maintained throughout the deployment of IT in the organization (Nfuka and Rusu 2010; Rau 2004).

Another aspect of the Actor dimension that emerged from the conceptual study was the importance of actors in advancing collaborative decision-making in matters related to IT Governance. While the chief information officer plays a lead role in constituting IT advisory and steering committees, this senior manager also has the responsibility of leading the decision-making process related to IT Governance and the deployment of IT resources and capabilities in the organization, as observed by Altemimi and Shanudin (2015) and Grembergen and Haes (2008). In this respect, Buchwald, Urbach and Ahlemann (2014), and Preston and Karahanna (2009) observed that a common understanding among the members of the advisory group reinforced the intellectual measurement of strategic alignment of information systems, which in turn was a powerful component for the alignment of IT and business strategies. However, despite having undertaken a collective decision-making approach, the ultimate decision-maker of an organization is its chief executive officer. Accordingly, having an unfettered connection to the chief information officer and the advisory committee is important in order to advance shared learning and enhance the quality of decisions. Indeed, Wu et al. (2015) found that linear reporting structures to the chief executive officer could strengthen the connection between the chief executive officer and the chief information officer: such a structure could enhance shared understanding, which in turn could improve the alignment between the organization’s information systems and business strategies. However, collaborative decision-making comes with collective responsibility and accountability for organizational issues, which can be enhanced by shared learning among the organization’s senior management. In this respect, the quality of IT Governance dictates the differentiation and integration of decision-making related to IT across all levels of operation in an organization, as observed by Broadbent and Kitzis (2005) and Peterson (2004).
Previous studies have shown holistically that senior managers, specifically the chief information officers (CIOs), are the main actors that implement IT Governance in their organizations (Balocco, Ciappini and Rangone, 2013). However, unlike the previous studies, this study expanded prior knowledge by identifying and explaining the specific behaviors and outcomes these and other actors engage in. In addition, unlike Broadbent and Kitzis (2005), Grembergen and Haes (2008) or Korac-Kakabadse and Kakabadse (2001) who all emphasized the importance of the top-tier managers as sole decision makers related to IT Governance, this study outlined the processes of IT Governance across all levels of organizational hierarchies, including across other top executives that did not necessarily have IT expertise and those of them who were not charged specifically charged with implementation of IT projects as well as mid-operational managers. Specifically, it outlined how these actors engage in IT Governance processes, as well as the roles and interactions with other organizational actors throughout the IT Governance processes.

6.3.3 Relating the Findings of the Conceptual Study to the Process Perspective

The process perspective of IT Governance addresses the ‘how’ aspect of the first research question, and suggests that implementation of IT Governance structures is highly dependent on the process drivers’ level of involvement and the maturity of the organization’s business processes. Structures and processes are underpinning the mechanisms of development and implementation of IT Governance in an organization. Senior executives are particularly instrumental in the creation of governance because they have authority to allocate resources and champion the implementation process through their leadership, as demonstrated by Gallagher and Worrel (2008), ITGI (2001), Juiz and Toomey (2015) and Webb et al. (2006).

However, the study revealed that decisions pertaining to IT were centralized in many cases, and the involvement of top-level supervisors in the decision-making process facilitated a strategic approach to planning and alignment between IT and business strategy. Although, Kearns and Sabherwal (2007) and Reynolds et al. (2010) agreed that governance structures tended to be centralized in organizations and the decision-making process was centralized as well, they do not elaborate on the mechanisms used in the centralized process of IT Governance of the extent to which such centralization facilitated the realization of business value from IT investments, which this study did.
At the organizational level, centralization enabled the assignment of strategic decision-making responsibility to the senior managers of an organization, who are the authoritative proprietors of such responsibility. This is because senior management is better positioned to facilitate alignment between the IT and business capabilities of the organization and its human resource as observed by Schnoll (2015) and Grembergen, De Haes and Guldentops (2004). Wu et al. (2015) reiterated the importance of strategic alignment because of its positive influence on the performance of an organization. However, to improve the quality of decisions regarding IT Governance, involvement of IT staff is important. To this end, it is advisable for the chief information officer to encourage good practice in communication between management and staff, to help unearth any issues or concerns that may influence the implementation of effective IT Governance (Ali and Green, 2005).

In addition, the study revealed that, although continuous monitoring of the performance of business and IT Governance is important, appropriate estimation frameworks that reported performance from a financial and a governance perspective should be used as well. This will ensure that financial performance is aligned to the effectiveness of IT Governance, as indicated by Wu et al. (2015). Moreover, the study indicated that, in many organizations, the performance of the IT Governance system suffered due to lack of alignment between the organization’s incentive and reward system and the behaviors that were targeted by effective IT Governance (Weill 2004). In this respect, De Haes and Van Grembergen (2016) observed that IT Governance became ineffective if there was a misalignment between the reward and incentive systems in the organization and the overall strategic goals of the organization.

With regard to the Process perspective, the conceptual study revealed that, in order for an organization to obtain enduring business value from IT investments, the mechanisms for developing, implementing and maintaining effective IT Governance must be applicable to the organization. This finding differs from that of by Kearns and Sabherwal (2007) and Reynolds et al. (2010) who found that governance structures and decision-making are centralized in organizations, because this study emphasized the importance of decentralized inputs by other employees, and not only IT managers, when facilitating the overall effectiveness of IT Governance, due to the resulting organization-wide acceptance.
6.4 Relating the Findings of the Phenomenological Study to the Existing Literature

The phenomenological study sought to explore the perspectives of senior executives and managers regarding IT Governance practices and therefore answer the second research question, i.e., **How and why do individual actors engage in generating business value from IT investments through IT Governance?** In other words, this study sought to identify—from the perspective of individual actors involved in IT Governance arrangements—the mechanisms by which effective IT Governance contributes to delivering business value. This section explains the findings of this phenomenological study. The interviews indicate individuals' perceptions on IT Governance practices in enterprises with over five hundred million dollars in revenue per year. Hence, the findings provide evidence of the application of effective IT Governance capabilities in delivering business value to organizations at the individual level. Each area contains constructs that are related to each other or to an in-between construct, as illustrated in Figure 6.3.

![Figure 6.3. Individual perspective of IT Governance practices](image)
The findings demonstrate that, from the perspective of individual actors involved in business-IT investment decision-making, IT Governance practices consist of four different areas, namely, Externalities, Conception, Conclusion and Outcome. The findings from the phenomenological study are summarized as the 13 propositions contained in Table 6.2.

**Table 6.2. Propositions from the findings of the phenomenological study**

<table>
<thead>
<tr>
<th>Proposition Number</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>Customer/market demands shape the Actor Agenda by providing actors with a better understanding of the external environment in which they operate.</td>
</tr>
<tr>
<td>5.2</td>
<td>Technology Progress shapes the Actor Agenda by providing actors with a better understanding of potential future organizational innovation opportunities.</td>
</tr>
<tr>
<td>5.3</td>
<td>Regulatory Demands shape the Actor Agenda by defining the set of rules and regulations that actors operate under while making IT Governance decisions.</td>
</tr>
<tr>
<td>5.4</td>
<td>Clearly defined business needs influence the Actor Agenda by providing a clear and consistent organizational framework that actors operate under while making IT Governance decisions.</td>
</tr>
<tr>
<td>5.5</td>
<td>Consultation is a transparent and formal process that provides input into IT Governance decision-making by defining requirements, deliverables, and accountabilities.</td>
</tr>
<tr>
<td>5.6</td>
<td>Inception is a hidden and informal process that alters IT Governance decision-making by defining requirements, deliverables, and accountabilities ex-ante.</td>
</tr>
<tr>
<td>5.7</td>
<td>The individual practices of Consultation and Inception constrain the available alternative decisions by altering the Perceived Collective Business Needs.</td>
</tr>
<tr>
<td>5.8</td>
<td>Assessment is a decision-making practice that involves formal analysis, evaluation and prioritization of alternative decisions. It is more likely to occur in the Conclusion phase, if the Conception phase was dominated by Consultation.</td>
</tr>
<tr>
<td>5.9</td>
<td>Endorsement is a decision-making practice that involves no assessment of Alternative Decisions. It is more likely to occur in the Conclusion phase, if the Conception phase was dominated by Inception.</td>
</tr>
<tr>
<td>5.10</td>
<td>Objection to decisions is more likely to arise if the IT Governance actors do not take the defined business needs into consideration.</td>
</tr>
<tr>
<td>5.11</td>
<td>Benefits from IT Governance decisions are more likely to arise if the IT Governance decision-making process involved Consultation, formal assessment of alternative decisions, and was influenced by a sufficient understanding of Externalities.</td>
</tr>
<tr>
<td>5.12</td>
<td>Conflict from IT Governance decisions is more likely to arise if the IT Governance decision-making process involved Inception, subsequent informal endorsement during the Conclusion, and avoided Externalities in the process.</td>
</tr>
<tr>
<td>5.13</td>
<td>IT Governance decision-making processes will improve over time if IT Governance actors are able to address conflicts and avoid subsequent pitfalls.</td>
</tr>
</tbody>
</table>

The findings of the phenomenological study are arranged according to the three pathways through which effective IT Governance capabilities facilitate business value in organizations.
6.4.1 Relating the Findings of the Phenomenological Study to the Content Perspective

According to the Content perspective of IT Governance, decisions made by individuals influence the quality and effectiveness of IT Governance. Studies have indicated that organizations can derive various forms of business value in different ways. For instance, Drnevich and Croson (2013) asserted that IT investments could enhance the competitive ability of an organization to create and capture value at the functional level. According to their observations, heavy investments in IT adjusted the entry and exit barriers into an industry or market, thus securing the capabilities of an investing organization from competitors. In addition, Selig (2016) and Satidularn, Tanner and Wilkin (2011) asserted that IT Governance required demand management strategies to direct and prioritize IT resources and functions.

While other studies have demonstrated that conflicts and the inability to achieve value from IT investments can result from flawed decision-making that lacked an adequate informational background (Smith, 2014, Kapoor and Lee, 2013) they do not elaborate the deficiencies of the decision-making process that could lead to the flaws which was addressed by phenomenological study of this research. For instance, Smith (2014) found that leaders and managers faced decision-making challenges such as dilemmas that required choices and resolutions and paradoxical tensions that defied resolutions. The inability to embrace such paradoxes and dilemmas could lead to the inability to arrive at decisions or make appropriate decisions related to IT.

In this case, Kapoor and Lee (2013) observed that the lack of deep and intuitive understanding of a phenomenon could deny organizations the ability to make operational and strategic decisions that would generate value for the organization. In addition, the inability to understand the complexity of the systems to be adopted by an organization can compromise decisions leading to IT investments. Indeed, Broadbent and Kitzis (2005), Guldentops (2004), and Lee and Lee (2015) agreed that, since investments in IT were high and the proposed value to be derived was often shrouded by uncertainties, firms needed to assess carefully the opportunities and challenges presented by the adoption of such technologies, to ensure that resources were utilized judiciously. To this end, Lee and Lee (2015) advised using the real option rather than the net present value approach in determining the potential value to be derived from IT investments. Further to this, Guldentops (2004) called for the quantification and
understanding of IT risks to make IT Governance effective. Therefore, unlike the previous studies by Kapoor and Lee (2013) and Smith (2014), which have demonstrated that decision-making may be flawed, thus leading to conflicts and the inability to achieve value from IT investments, the current study clarified the mechanisms underpinning IT Governance decision-making process that either lead to business value or generate conflict.

This study emphasized that before any heavy investment in IT is undertaken, good quality decisions need to be made. While this notion, has been supported by Li et al., (2012) who indicated that the quality of information available to decision-makers influences the quality of decisions that they make, this study goes further to provide a pathway of arriving at such quality decisions which is a valuable tool for decision makers. In addition, Kapoor and Lee (2013) and Weill and Ross (2004) observed that governance choices enabled an organization to coordinate changes that accompanied interdependent activities aimed at creating value from new technologies. Further, Broadbent and Kitzis (2005) and Memiyanty and Putera (2010) found that good IT Governance facilitated faster and better decisions while building trust as well. In this respect, the modes of governance chosen by a company were informed by an analysis of complements that considered the inclusion of benefits to the firm from the demand side, which in turn, enhanced the value of the products or services provided by the organization (Turel and Bart 2014).

Unlike previous studies (Memiyanty and Putera, 2010; Kapoor and Lee 2013), this study indicated that decisions made by individuals should lead to an Outcome, which can either be the Realization of desired Benefits for the organization or some form of Conflict. Realized benefit is the business value that was initially claimed to be the result of an alternative decision, and then the post-decision implementation was realized through benefit realization processes. Alternatively, conflicts are disagreements and arguments between decision-makers, or between decision-makers and those affected by the decision. A lack of proper input into the decision could result in conflict between different business units or business units and the enterprise.
6.4.2 Relating the Findings of the Phenomenological Study to the Actor Perspective

The Actor perspective of IT Governance indicates that an organization’s key actors not only make decisions regarding IT investments, but also decide what issues to prioritize when making decisions related to IT Governance. This study indicated that the practices undertaken by individuals are dependent on the agendas they possess, which are underpinned by their different visions of their organization’s progress. In other words, actors have agendas that influence their decision-making practices. In this aspect, while Selig (2016) observed that the chief information officer (CIO) was responsible for investments in IT infrastructure, and therefore responsible for approving mandatory and discretionary IT services and investments, he did not delve into the decision-making process employed by the CIO or the influencers of decisions made.

The agendas that influence actors’ IT Governance-related decisions emanate from both internal and external environments. The vision, mission and capabilities of the organization influence the organization’s IT-related decisions. In addition, the organization’s external environment is also considered by the individual actor, and influences the manner in which they approach and undertake decisions regarding IT Governance (Selig, 2016). However, this study found that the external environment is comprised of Externalities such as the demands of the market and customers, the progress and advancement of technology, the demands of the regulatory agencies, and the business needs that an organization has defined. In this respect, while Grembergen and Haes (2017) mentioned the pertinence of industry regulators and legal requirements as motivators and directors of IT Governance, they do not delve into other Externalities that influence IT related decisions as this study has demonstrated. In the same breadth, while Smith (2014) asserted that organizations and their managements faced intense pressures to address simultaneously numerous and competing strategic demands emanating from a complex and global business environment, they did not venture into clarifying how these competing interests were discriminated and prioritized during the decision-making process. In addition, while Broadbent and Kitzis 2005, and Smith, 2014 indicated that decision-makers needed to be able to accept, accommodate, differentiate and integrate, as strategies of addressing the paradoxes that complicated the process of making decisions, evidence of the processes of addressing such paradoxes that lacked in these authors’ studies are provided by the phenomenological enquiry of this research.
Indeed, many IT Governance decisions involve some form of Consultation with both internal and external sources, owing to the realization that IT Governance is interdisciplinary and that no individual has monopoly over knowledge related to IT Governance (Charani et.al. 2014; Lee and Lee, 2009; Webb, Pollard, and Ridley 2006). In addition, Consultation enables understanding of the internal and external environments in which an organization is operating. In this respect, Wilmore (2014) and Rau (2004) asserted that organizations needed to consider the membership composition of their IT Governance bodies, ensuring sufficient skill, capacity and motivation to facilitate appropriate contribution and engagement in the decision-making process, which should be a human-centered process. This may explain the presence of steering committees in organizations aimed at facilitating sound decision-making (Reynolds et al. 2010; Weill and Ross 2004). Nonetheless, the mechanisms for Consultation depended on the requirements, deliverables, and accountabilities that underpinned the practice of the actors. Alternatively, decision-makers undertook the process of Inception while evaluating their choice between options. Altogether, the study revealed that the focus of the mechanisms of decision-making, and the understanding of the decision-making arrangements that were required, were essentially based on the individual actor. With respect to this, Karhade, Shaw and Subramanyam (2015) found that the decision rationale that was employed in the prioritization of IT investments was tacit and thus it was sometimes unknown to the decision-makers. As such, although the information required for decision-making was available to the decision-makers, the interconnections among the information’s attributes that might formulate decision rules remained tacit and thus required codification. For this reason, it was important that the rationale for decisions was communicated, was applied consistently and was risk appropriate (Orozco, Tarhini and Tarhini, 2015).

In conclusion, in the current study, the influence of external factors, and especially governance compliance regulations bore heavily on the external environment informing the decisions made. This is unlike the findings of previous studies (Selig, 2016; Charani et.al. 2014; Lee and Lee, 2009), which although they emphasized on the agendas of actors as the main influencers of decisions made, the CIO was considered the main actor in IT Governance issues, thus ignoring the involvement of other actors at the top management and mid-operational levels that was beyond acknowledging their presence in the management team.
6.4.3 Relating the Findings of the Phenomenological Study to the Process Perspective

The Process perspective of IT Governance describes the various procedures undertaken by decision-makers as they seek to evaluate the internal and external factors that influence their agendas, and identify the Outcomes of that evaluation. The findings show that, from the perspective of individual actors involved in IT Governance, IT Governance practices consist of a preliminary element of Externalities followed by the three procedural stages of Conception, Conclusion and Outcome, as illustrated in Figure 6.3. This means that arrival at decision Outcomes is a product of well-defined procedures for the decision-making process (Brown and Grant 2005).

Figure 6.3 illustrates the procedures undertaken by decision-makers to arrive at either decisions that advance the realization of benefits from IT investments, or conflicts that invalidate the Outcome of IT Governance. The decision-making process undertaken by actors in organizations involves various constructs that underpin progression from the consideration of Externalities through to Conception and Conclusion, in order to arrive at an Outcome. Each area contains constructs that are related to each other or to an in-between construct, which is an indication of being based on existing but modified theory (Lee and Lee, 2009). The relationship between key constructs is presented by a proposition, as suggested by Colquitt and Zapata-Phelan (2007), who observed that theory builders introduced new constructs or re-conceptualized existing constructs. In this case, when making decisions related to IT Governance that might realize business value from IT investments, the decision-makers, who are the actors in their organizations, undertake a procedure that involves various processes as indicated by Attaran (2004). Additionally, Kapoor and Lee (2013) identified resource allocation and resource orchestration as decision-making processes undertaken by organizations in a bid to create value from IT.

Identification of an actor’s agenda depends on the Externalities influencing the operational environment of the organization. The study revealed that actors’ visions were central to deciding which Externalities shaped the vision of the organization and the role of IT Governance in the realization of the organizational vision (Broadbent and Kitzis 2005). With many organizations having visions that were customer-centric, the success of their IT Governance was dependent on the manner in which IT Governance addressed customer...
demands. In addition, the study revealed that technological advancements improved the understanding of innovation opportunities presented to the organization in the future. As such, any IT investments made in an organization are directed towards enhancing the creative and innovative capabilities of the organization. This observation is supported by Baker (2012), who reiterated the importance of the nexus between technology, organization and environment in enhancing the innovativeness of an organization, and the importance of these three elements in influencing decisions about adopting and implementing innovations in organizations, although he did not relate the nexus to the effectiveness of IT Governance. The technology-organization-environment (TOE) framework is particularly applicable in the case of developing and implementing an IT Governance system as an innovation in an organization.

Further, new Regulatory Demands at the local, state, and national levels influence the vision formulated by the organization, which enables it to operate successfully under the rules and regulations of its industry (Gordon 2013; Li et al., 2012). Moreover, clarity in the definition of business needs influences the organization’s vision by aligning it to the true needs of the organization. As such, any IT investments made by an organization should advance the alignment of the organization’s business strategy and its vision as informed by the environment in which it operates, thus guiding the employment and deployment of IT Governance capabilities (Broadbent and Kitzis 2005; Guldentops 2004). However, this study broadened the demand by regulations to include any other influencer that is external to the organization such as market and industry forces.

Conception is a process that aims to secure the perceived collective business needs that should be satisfied by effective IT Governance capabilities within an organization, after consideration of all the Externalities influencing such needs. According to the findings of the study, Conception involves Consultation and Inception, in which the collective business needs are identified by an actor in the organization through the assistance of other actors or through an internal thought process respectively. However, while Conception and Inception occurred in many organizations, Conception was a formal and transparent process of decision-making, unlike Inception, which was informal and hidden. In this aspect, although Weill and Ross (2004) and NCC (2005) advocated for clarity and transparency in decision-making, the procedural journey the delivers such clarity and transparency lacked. As such, this study developed
definitions of the requirements, deliverables and accountabilities provided by Conception that were based on actual results and evidence, while those of Inception were based on forecasts and thus were ex ante, as illustrated in propositions 5.5 and 5.6. Indeed, Saaty and Peniwati (2013) and Karhade, Shaw and Subramanyam (2015) noted that decision-making undertaken by individuals was often silent and tacit, and characterized by internal communication, while that of a group required explicit communication among its members. As such, it was advisable for individuals to voice their thoughts about decision-making in a structured manner, although such a process required institutionalization and integration with the numerous decisions that groups of people have to make to satisfy the stipulated objectives (Hosseinbeig et al. 2011; Saaty and Peniwati, 2013).

However, the study revealed the constraints of arriving at the alternative available decisions presented by the individual practices of Consultation and Inception. In this regard, the quality of a decision depended on the availability of multiple options, which was an indication of the richness and rigor of the decision-making process. Indeed, Saaty and Vargas (2012) observed that decisions were obtained from consideration of the different possible Outcomes that lead to a best Outcome, which sometimes required cooperation on an agreed single Outcome. However, this required trade-offs to be made among many criteria and objectives, which were informed by evidence and practicality rather than reliance on the memory of an individual or the appearance of an individual’s reasonableness (Novotny, Bernroider and Koch, 2012). In this respect, this study revealed the motions of conception and Inception processes that were lacking in existing literature aforementioned.

The study revealed that the final decision related to IT Governance practices in an organization is made at the Conclusion stage. At this stage, the available options leading to alternate decisions are either assessed or endorsed, and thereafter, a final decision is reached. The choice between engaging in assessment or endorsement rests on whether Consultation or Inception dominated the Conception phase of decision-making. Specifically, assessment involves the formal analysis, evaluation and prioritization of alternative decisions, as opposed to endorsement, in which the actor or actors undertake no assessment of alternative decisions, as indicated by propositions 5.8 and 5.9 respectively. In this aspect, although Trigeorgis and Reuer (2017) reflected on the decision-making processes that organizations had to undergo and the
trade-offs that they had to make before arriving at a final decision on the organization’s strategic direction, they did not conceptualize the process as done in this study. In this case, options were a pertinent component of decisions, because they comprised a possible future action that an organization could undertake if such a decision would be beneficial to the decision-maker and the organization (Guldentops, 2004; Peterson, 2004). However, according to Lee et al. (2008), lack of IT policies and principles and lack of managerial support could hinder the decision-making process. Therefore, options needed to be unearthed to enrich both short-term and long-term decisions. Contrastingly, this study revealed that a compromise of the collective business needs of the organization, as perceived by the actors, might lead to an objection, which in turn would lead to the rejection of the option, at least in the short term.

The product of the entire decision-making process is the Outcome. The study revealed that the Outcome of the decision-making process could take two forms: namely, the realized benefit or a conflict. On one hand, according to proposition 5.11, benefits from IT Governance decisions are more likely to arise if the IT Governance decision-making process involved Consultation, formal assessment of alternative decisions, and was influenced by a sufficient understanding of Externalities as observed by Larson (2007). On the other hand, as indicated in proposition 5.12, conflict from IT Governance decisions is more likely to arise if the IT Governance decision-making process involved Inception, subsequent informal endorsement during the Conclusion, and avoided Externalities in the process. However, conflicts have a pertinent role to play in the development of effective IT Governance in an organization, because they provide lessons that can be learnt by actors and thus inform future decision-making initiatives. As such, this study revealed that IT Governance decision-making processes would improve over time if the actors in IT Governance are able to address conflicts and avoid subsequent pitfalls, as stipulated in proposition 5.13. However, while it is desirable to reduce conflicts or incorrect decisions, leadership is required by decision-makers to direct the decision-making process in a structured manner (Grembergen and Haes 2008; Rau 2004; Weill and Ross, 2005). According to Bolman and Deal (2017), organized decision-making activities are pertinent for the navigation of complex industry environments, because they facilitate decision-making that has a strategic bearing to the success of an organization.
In conclusion, unlike Broadbent and Kitzis (2005), Li et al. (2012), and Memiyanty and Putera (2010) who focused on the quality of information and the speed of decision-making as being pertinent for the making high quality decisions related to IT made by actors, this study evidenced the intricate procedure used by the actors to arrive at decisions for or against IT investments. Moreover, this study advanced the understanding of the process and importance of collaborative decision-making among top tier managers to that maximum business value is achieved. Notably, the study explained the long-term benefit of addressing the conflicts emanating from the Conception and Conclusion stages of the decision-making process, which lacks in previous literature aforementioned. Therefore, this study extended available evidence by consolidating decision-making processes from different actors in top tier management into a structured procedure that can be actively and consciously pursued by ITG actors regardless of their industry or organizational attributes.
6.5 Addressing the Research Objective

The main objective of the study was to investigate how and why effective IT Governance contributes to delivering business value from IT investments. The conceptual inquiry sought to address this objective by generating the definitions of IT Governance, effective IT Governance and business value. At the same time, this inquiry addressed the manner in which effective governance capabilities and mechanisms in IT can facilitate the attainment of business value through the ‘how’, ‘what’ and ‘who’ pathways: namely, the Process, Content and Actor dimensions. To this end, the conceptual study provided a conceptual model that introduced and described the constructs that explain the link between effective IT Governance and business value, using the Process, Content and Actor dimensions from the organizational perspective.

According to the Effective IT Governance Business Value (EITGBV) model, the ‘what’, which is related to Content, indicates that desirable behaviors in the initialization of IT in an organization require that organizational capabilities be clearly articulated, so that effective IT Governance can yield the desired business value. In addition, the ‘who’, which is related to the Actors in an organization, requires that accountabilities and responsibilities of every actor in the organization be clarified for business value to be derived from effective IT Governance. Finally, the ‘how, related to Process, requires that applicable IT Governance mechanisms be in place for business value to be accrued from IT investments in an organization.

Thereafter, the phenomenological study provided evidence of existing practices of IT Governance from an individual perspective, which supported the applicability of the Effective IT Governance Business Value (EITGBV) model from an individual perspective. Therefore, the phenomenological study indicated that progressing the decision-making process through official channels that involve Consultation and assessment is more likely to lead to the realization of benefits associated with business value. In contrast, progressing the decision-making process through unofficial channels that involve Inception, endorsement and potentially objection led to the likely occurrence of conflict. The constructs obtained from the phenomenological study, which decide the nature of the Outcome of the decision-making process, were separated into top constructs and bottom constructs, with each category linked to the likelihood of realizing benefits or conflicts respectively.
6.6 Chapter Summary

After elucidating the manner in which the three pathways (Content, Actor and Process) translate effective IT Governance into business value, the ‘why’ was justified through the importance of business value to the performance and survival of a firm. Additionally, the ‘how’ was answered by determining the capabilities and behaviors needed to ensure that effective IT Governance delivered the intended business value, as identified by the organizational strategy. A conceptual model was developed through the conceptual study that integrated the three pathways and the constructs needed to translate effective IT Governance capabilities into business value. On the other hand, the phenomenological study provided evidence from top organizational executives, the key drivers of decision-making in their organizations, who provided constructs that facilitate the realization of business value from effective IT Governance capabilities, which in turn informed on the investments in IT undertaken by those organizations.
7 CONCLUSION

7.1 Chapter Introduction

In this chapter, the major conclusions drawn from this research are measured against the objectives of the study and the questions that the study aimed to answer. Therefore, as presented in Figure 7.1, Chapter 7 initially summarizes the theoretical and empirical contributions made. In addressing the contributions of the study, reference is made to the research gaps that motivated and anchored the study and how they were addressed through the research. Thereafter, the limitations of the conceptual and phenomenological studies are provided. This is useful in situating the circumstances experienced by the researcher that influenced the undertaking of the study within the research environment. Next, opportunities for conducting future studies are identified and highlighted. This helps to direct other researchers to the areas that were not covered in the study, but that should be addressed to further the accumulation of knowledge. Finally, the chapter concludes with the managerial implications of the study.

Figure 7.1: Structure of Chapter 7 – Conclusion
7.2 Contributions of this Research

This study set out to address research gaps in the Information Systems literature related to investigate how and why effective IT Governance contributes to delivering business value from IT investments. As such, this research addressed the gaps that were outlined and identified by answering the questions, \textit{how and why do organizations generate business value from IT investments through IT Governance?} And \textit{how and why do individual actors engage in IT Governance practices, and how do they thereby generate business value from IT investments?} In order to address these questions, the research initially delineated clear conceptualizations for what IT Governance and effective IT Governance entails, and what the benefits of effective IT Governance include. Altogether, this study provided new definitions that enabled a new conceptualization framework for IT Governance that provided a better understanding of the manner in which organizations used IT resources and investments for establishing and functionalizing IT Governance.

Addressing the organizational perspective on the manner in which effective IT Governance delivered business value was accomplished in Study 1 through a conceptual inquiry into the constructs, concepts and interconnectedness of effective IT Governance and business value. Furthermore, investigating the practices of effective IT Governance was accomplished through a phenomenological inquiry in Study 2, which enlisted top tier managers that deployed IT investments and capabilities. Collectively, Study 1 and Study 2 provide the following important theoretical and empirical contributions:

First, the conceptual inquiry in Study 1 provides an important theoretical contribution in the form of a novel three-dimensional conceptual framework and propositions. Specifically, the framework identifies the interrelationship between five constructs and seven propositions that explain potential pathways from EITG to BV. The existence of a theoretical contribution in this case is evident because, according to Colquitt and Zapata-Phelan (2007), the framework stemming from Study 1 introduces, clarifies, and supplements existing theory. Specifically, the Content-Actor-Process dimensions identified and introduced in the EITGBV model contribute to a better understanding of effective IT Governance and business value constructs, but also to the manner in which effective IT Governance contributes to business value in organizations. Furthermore, Study 1 introduced substantive mediators of an existing process or relationship
(Colquitt and Zapata-Phelan, 2007). Specifically, Study 1 suggested the Applicability of Mechanisms, Desirable Behavior in the Use of IT, Clarity of Accountability, and Responsibility in Mid-Operational Levels as core constructs underpinning the new model. Ultimately, these constructs clarify the substantial relationship between effective IT Governance and business value in organizations. As such, the conceptual framework developed in section 4.6 provided new insights into the potential mechanisms through which effective IT Governance leads to greater organizational benefits through three pathways that simplify the complexities presented in existing theory.

Second, the phenomenological inquiry in Study 2 also provides an important theoretical contribution in the form of a novel empirically derived framework explaining EITG practices. Specifically, Study 2 identified four procedural-stages (phases), twelve new constructs, and thirteen propositions in an inductive theory-building process (Colquitt and Zapata-Phelan, 2007). Study 2 therefore built new theory explaining IT Governance practices from the perspective of individuals, and uniquely showed how and why effective IT Governance decisions may lead to business value.

Third, Study 2 provides an empirical contribution to the Information Systems literature by generating and highlighting unique evidence regarding the individual practices related to IT Governance. Study 2 highlighted empirically the means by which senior managers may mediate and facilitate IT Governance practices. According to Gioia et al. (2013), empirical contributions to knowledge describe experiences of individuals and processes unfolding in organizations. As such, the findings of this study, discussed in section 5.6, represent an empirical contribution by identifying the Content, Actor and Process pathways within which managers ensure the potential effectiveness of IT Governance in their organizations. The empirical contribution provided by new data emanating from managers in Australia reveals insights formerly unknown about IT investment decision-making, and also about managers’ behavior in the ITG context. The contributions made by this study are summarized in Table 7.1.
Table 7.1: Research gaps and how they were addressed by the study

<table>
<thead>
<tr>
<th>Research Gaps</th>
<th>Description</th>
<th>Author</th>
<th>Addressed by this study through</th>
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<tr>
<td></td>
<td>Insufficient and inadequate theory explaining how and why effective IT Governance leads to business value at the organizational level.</td>
<td>Brown, 2015; Buchwald, Urbach and Ahlemann, 2014</td>
<td>The development of a conceptual model that linked effective IT Governance and its capabilities to business value through multidimensional conceptualization pathways of Content-Actor-Process with clarified definitions of underlying concepts and constructs through a conceptual inquiry</td>
</tr>
<tr>
<td></td>
<td>Insufficient and inadequate theory explaining the actual IT Governance practices performed by individuals.</td>
<td>Rahimi, Möller and Hvam, 2014; Turel and Bart, 2014; Gordon, 2012; Novotny, 2012; Kim, Sarkar and Wadhwa, 2016; Sesay and Ramirez, 2016</td>
<td>The extraction of the individual perspectives of high ranking organizational executives and individuals involved in IT Governance practices through a phenomenological study</td>
</tr>
<tr>
<td></td>
<td>Lack of empirical evidence that describes IT Governance practices and procedures used by individuals in organizations.</td>
<td>Wu et al., 2015, Gordon, 2012</td>
<td>The empirical research identifying and describing procedural stages of IT Governance practices that influence the deployment and utilization of effective IT Governance to achieve business value for their organizations from the lens of individual actors through the phenomenological inquiry</td>
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</table>

7.3 Limitations of this Research

The first limitation of this study involved the challenge of generalizing the results due to the small number of participants involved in the phenomenological study. Although the number of participants for the phenomenological study was adequate, as discussed in Chapter 5, and the participants were drawn from diverse industries, there were no indications that all industries had been covered or whether the unique characteristics of specific industries were considered. Indeed, the business industries represented in the study were few, with the education sector being overrepresented. Therefore, it is likely that the findings obtained were biased towards the education industry. As such, it would be inaccurate to generalize the findings to any industry without due regard to the peculiarities and uniqueness found therein. In addition, the study focused on organizations located in Australia, which may limit the applicability of the findings to organizations located elsewhere globally.
The second limitation was that the study did not control for the possibility that participants’ perspectives were influenced and/or supplemented by the operations in other firms and not just their own. Although the participants were encouraged to express themselves freely regarding the manner in which IT Governance issues were handled in their companies, no guarantee was provided to ensure that the participants’ opinions were confined exclusively to occurrences within their own organizations. This was because there was no official verification, from company documents for instance, of the information that participants disclosed. Additionally, the information provided was not corroborated by any of the company’s other employees, because a single individual represented a single organization in the study in most scenarios.

The third limitation of the study was the inability to relate the competency of the board to the improvement of business value derived from IT investments and capabilities. Considering that top tier managers were involved in the phenomenological study as the source of data, it was unlikely that they would divulge negative information about their IT competence, even if there were problems. Accordingly, the study did not assess the IT expertise of the participants and therefore could not relate the information they provided to their competence levels, as all participants were assumed to have proficiency in IT and in the governance issues related to IT.

The fourth limitation of this study emanated from the inability to determine whether or not the IT Governance issues addressed were related to organizations that had experienced IT successes or failures. Therefore, the information derived from the study did not differentiate between firms that had derived business values from their IT investments in their entire lifetimes, or whether the business value derived had been influence by a failure within the time of the firms’ existence. Therefore, it was assumed in the study that all participants were from organizations that had managed to undertake sound decisions regarding IT and were thus reaping the benefits of effective IT Governance and the associated business value.

The fifth limitation was the lack of predictive value from the governance model generated in the conceptual study. While the framework developed in this study was associated with realized contribution of effective IT Governance to delivering business value from investments made in IT, there was no assurance that organizations that followed this framework would actually accrue value benefits, because the model was not subjected to any testing.
7.4 Future Research Opportunities

This study undertook a general outlook on IT Governance, without any consideration of industry specifics that would influence the business value obtained from IT investments. As such, industry specific studies that interrogate the applicability of the EITGBV model developed in the conceptual study are recommended for future research. In addition, future studies should focus on small and medium enterprises, and particularly those that do not have a formal IT Governance structure, which were excluded from the present study. The mechanisms of IT Governance in small and medium enterprises remain unknown, because most governance research has been undertaken in large organizations. Therefore, identifying the decision-making procedures in SMEs may help to reveal the challenges that they experience in implementing effective IT Governance, and therefore help to address such challenges and improve the business value realized by these organizations. In the same vein, country specifics, particularly those pertaining to the legal environment, were not considered in this study. Therefore, future research should focus on unique country-specific parameters, such as the Australian legal environment that could influence the governance of IT in Australian organizations. This could be extended to an investigation of the country-specific legal frameworks that influence the effectiveness of IT Governance, in which the Australian legal environment is compared against other legal frameworks in other countries within the region and throughout the world. This would help unearth any advantages or disadvantages that the Australian legal environment possesses that could facilitate or undermine the effectiveness of IT Governance in firms.

This study focused on chief executive officers, chief information officers, chief financial officers and other top ranking managers in Australian organizations who are the active participants in IT-related decisions, and their perceptions regarding the business value realized from IT investments. However, the study did not consider the organizational changes that occurred in organizations after an IT failure event. As such, future studies should explore the manner in which IT Governance failures and a lack of realization of intended business value influence the decision-making process at the board and managerial levels, considering that such failures usually call for changes in board members, managers and composition of steering committees. The influence of IT failure may have an impact on the turnover of managers and staff with IT expertise, which would, in turn, affects the realization of business value from the IT
resources deployed by the organization. Indeed, it would be interesting to discover whether firms retained their IT staff and managers, or changed their decision-making practices, in order to remedy the IT failure, and to even identify how organizations should approach IT Governance failures.

Further, future studies should include IT resource users outside of management to build on the evidence of governance behaviors exhibited by organizational stakeholders and how these behaviors contribute to the realization of business value. Moreover, since this study focused on the mechanisms of IT Governance that lead to the realization of business value, future studies should investigate which of these mechanisms are circumvented or used improperly, which may stymie realization of business value in many organizations. This would help to identify the specific areas of weaknesses that compromise the effectiveness of IT Governance in organizations and among the individuals in organizations.


7.5 Managerial Implications

This study has valuable implications for managerial practice in organizations that seek to obtain business value from IT investments. The study improves the understanding of concepts related to effective IT Governance and business value that is often lacking among managers, since many of them have limited IT expertise. This reduces the ambiguities associated with the concepts and constructs, which undermines the application of well-established IT Governance practices.

Therefore, first, managers of organizations should identify the organizational objectives that could benefit from IT investments and ensure that there is a good fit between the IT and business strategies of the organization. In this way, the investments in IT would be perceived not just as a functional but also as an operational undertaking, which engages the whole organization rather than just a particular section of it. A thorough understanding of IT among managers would facilitate its system-wide and organization-wide deployment and application.

Second, managers should involve all stakeholders in their organizations when making decisions related to the deployment and utilization of IT. This would help the managers to identify the specific needs of their organizations and to have proper input into the decisions. In turn, this would inform the budgeting process, thus ensuring that investments made in the organization are commensurate to the needs of the organization, and consequently reducing resource wastage and incomplete implementation of IT projects. In addition, the involvement of internal stakeholders in particular would facilitate the development of effective and safe use of IT infrastructure, to reduce the risks of security breaches that are commonly associated with IT and have become a source of organizational failures recently.

Third, the managers in an organization should work collaboratively on governance issues related to IT, such that they are collectively responsible and accountable. Such collaboration, particularly with the chief information officer, would enhance the IT competencies and capabilities of management and help to align IT to the business strategies of the organization. This would ensure that IT investments are effective in yielding the desired business value in the organization.
Fourth, managers should show leadership in IT Governance by championing effective IT Governance practices in their organizations. In this way, they would infuse the culture of governance and sound practices in the utilization of IT that would not only see their organizations achieve the desired competitive advantage, but also avoid the pitfalls associated with failed IT Governance. In addition, managers need to review frequently the performance of IT investments in their organizations, in order to not only evaluate the performance of IT but also to take remedial measures and make adjustments that are needed to ensure that IT yields the desired results.
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This appendix presents a summary of findings from the literature on the key elements of effective IT Governance (Content-Actor-Process).
A summary of findings from the literature on the key elements of effective IT Governance (ordered by author)

<table>
<thead>
<tr>
<th>Author(s) (Year)</th>
<th>“Content” Dimension (Decision Domain)</th>
<th>“Actor” Dimension (IT Governance Style)</th>
<th>“Process” Dimension (IT Governance Mechanisms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ali and Green (2012)</td>
<td>inclusion of senior governance on a regular premise</td>
<td></td>
<td>A structure of connections and procedures to control the undertaking in request to accomplish the undertaking's objectives by including worthwhile adjusting risk versus return over IT and its procedures” (p. 180). The presence of governance instruments, for example, (1) a culture of consistence in IT; (2) corporate correspondence frameworks support; (3) inclusion of senior governance on a regular premise; and (4) a corporate performance estimation framework fundamentally affect the level of effective IT Governance.</td>
</tr>
<tr>
<td>Bowen, Cheung and Rohde (2007)</td>
<td></td>
<td>explores the factors influencing IT Governance structures, processes, and outcome metrics</td>
<td></td>
</tr>
<tr>
<td>Bradley et al. (2012)</td>
<td></td>
<td>Relational and structural mechanisms for example, CIO basic force, IT business common cooperation, and an entrepreneurial society on IT Governance can absolutely influence IT Governance and in a roundabout way, IT value creation.</td>
<td></td>
</tr>
<tr>
<td>Author(s) (Year)</td>
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<tr>
<td>Brown and Grant (2005)</td>
<td>the Conceptual Framework For IT Governance Research</td>
<td>likelihood of continuing to explore the concept of IT Governance in an attempt to find appropriate mechanisms to govern corporate IT decisions</td>
<td></td>
</tr>
<tr>
<td>Chong and Tan (2012)</td>
<td>a dynamic inclusion of an overseeing body, Socio-specialized components, for example, a dynamic inclusion of an overseeing body, an organized correspondence process also, the relational culture presence what's more, attitudinal duty are strategic to the viability of IT Governance in a collaborative system</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dahlberg and Kivijärvi (2006)</td>
<td>Presents an IT Governance framework that builds on the integration between the structural and processes perspectives of IT governance, business-IT alignment, and senior executives’ needs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Damianides (2004)</td>
<td>redirecting focus from compliance as a necessary evil to compliance as a competitive advantage, and capitalize on the recovering economy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>De Haes and Grembergen (2004)</td>
<td>IT Governance relationship with enterprise governance</td>
<td>turning a spotlight on governance and controls over information technology</td>
<td></td>
</tr>
<tr>
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<tr>
<td>De Haes and Grembergen (2005)</td>
<td></td>
<td></td>
<td>implementing IT Governance, using a mixture of processes, structures and relational mechanisms</td>
</tr>
<tr>
<td>De Haes and Grembergen (2006)</td>
<td></td>
<td></td>
<td>how organizations are implementing IT Governance to achieve a better fusion between the business and IT</td>
</tr>
<tr>
<td>De Haes and Grembergen (2009)</td>
<td></td>
<td></td>
<td>explores how organizations are implementing IT Governance and analyses the relationship between these implementations and business/IT alignment</td>
</tr>
<tr>
<td>De Haes and Van Grembergen (2009)</td>
<td></td>
<td></td>
<td>There is a positive relationship between the utilization of IT Governance practices and business/IT alignment. Very adjusted firms influence more developed practices of IT Governance.</td>
</tr>
<tr>
<td>Grembergen (2000)</td>
<td></td>
<td></td>
<td>how the IT balanced scorecard can be linked to the business balanced scorecard to support the IT/business governance and alignment processes</td>
</tr>
<tr>
<td>Grembergen (2002)</td>
<td></td>
<td></td>
<td>introduces a Minitrack IT Governance and its Mechanisms to enhance publications on the issue of IT Governance and its mechanisms</td>
</tr>
<tr>
<td>Grembergen (2004)</td>
<td>Ch.1-3, Ch.11, 13, 14</td>
<td>Ch.11, 13, 14</td>
<td>Ch.4-14</td>
</tr>
<tr>
<td>Author(s) (Year)</td>
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<tr>
<td>Grembergen et al. (2004)</td>
<td>analyses the IT Governance implementation at KBC, a major Belgian financial group</td>
<td>analyses the IT Governance implementation at KBC, a major Belgian financial group</td>
<td>describes how an organization can implement IT Governance, using a mixture of processes, structures and relational mechanisms</td>
</tr>
<tr>
<td>Grembergen and De Haes (2008)</td>
<td>Ch. 1, 2</td>
<td>Ch. 1, 2</td>
<td>Ch. 3-6</td>
</tr>
<tr>
<td>Grembergen and De Haes (2009)</td>
<td>Ch. 5, Ch. 7</td>
<td>Ch. 5, Ch. 7</td>
<td>Ch. 2-4, Ch. 8</td>
</tr>
<tr>
<td>Guldentops (2004)</td>
<td>Discusses the board and executive management’s responsibilities</td>
<td>Explains actions plans for implementing effective IT Governance and through COBIT</td>
<td></td>
</tr>
<tr>
<td>Hardy (2006)</td>
<td></td>
<td>how compliance legislation can be used to get more support from the Board when it comes to security issues, and how information assets still need to be protected further</td>
<td></td>
</tr>
<tr>
<td>Herz et al. (2012)</td>
<td></td>
<td>Multisourcing governance components in a business group were resolved to be either organization inward systems or supplier-related components. Structures, forms and relational mechanisms can be designed to coordinate distinctive connections of multisourcing between the groups within the business.</td>
<td></td>
</tr>
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<tr>
<td>Huang et al. (2010)</td>
<td></td>
<td></td>
<td>IT steering committees constituted of executive-level participants who adopted a longer-term, broader orientation. The SMEs with and easily-accessed broadly-disseminated IT Governance policies experienced greater accomplishment in IT use.</td>
</tr>
<tr>
<td>ITGI (2001)</td>
<td>Ch.5</td>
<td>Ch.3</td>
<td>Ch.6-7</td>
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<tr>
<td>Kaarst-Brown and Shirley Kelly (2005)</td>
<td></td>
<td></td>
<td>the potential impact of Sarbanes-Oxley for IT Governance, IT budgets, and relationships with vendors and outsourcers</td>
</tr>
<tr>
<td>Korac-Kakabadse and Kakabadse (2001)</td>
<td></td>
<td>arguments for greater governance attention in the IS/IT arena are presented</td>
<td>Two key models of governance are highlighted, the control and stakeholder models</td>
</tr>
<tr>
<td>Larsen et al. (2006)</td>
<td></td>
<td></td>
<td>analyses the challenges of the adopted IT Governance arrangements and mechanisms</td>
</tr>
<tr>
<td>NCC (2005)</td>
<td>Ch.1</td>
<td>Ch. 2, Ch. 4, Ch. 6, Ch. 9-10</td>
<td>Ch. 2-13</td>
</tr>
<tr>
<td>Niemann (2006)</td>
<td>Discusses how Enterprise Architecture supports governance and strategy</td>
<td></td>
<td></td>
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<tr>
<td>Nolan and McFarlan (2005)</td>
<td></td>
<td>board practices for monitoring technology investments</td>
<td>a framework to develop IT policies</td>
</tr>
<tr>
<td>Author(s) (Year)</td>
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<tr>
<td>Patel (2002)</td>
<td></td>
<td></td>
<td>Presents a normative framework for global e-business IT Governance that explains and elaborates e-business strategies for coping with emergent organizations and planned aspects of IT</td>
</tr>
<tr>
<td>Peterson (2001)</td>
<td></td>
<td></td>
<td>An exploratory study of configurations and coordination mechanisms for IT Governance in European-based transnational companies</td>
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<td>Peterson (2004)</td>
<td>Presented lessens for architecting of IT Governance</td>
<td>A diagnostic model presented for IT Governance</td>
<td>Provide a thorough understanding and holistic picture of effective IT Governance practices</td>
</tr>
<tr>
<td>Peterson et al. (2000)</td>
<td></td>
<td></td>
<td>Identifies the diversity of hybrid configurations and integration mechanisms and explores the IT performance effects</td>
</tr>
<tr>
<td>Prasad et al. (2010)</td>
<td>IT incorporates the foundational systems in the type of the initiative that guarantee that the firm's IT maintains and augments the firm's procedures and objectives (p. 216).</td>
<td>IT incorporates the foundational systems in the organizational structures that guarantee that the firm's IT maintains and augments the firm's procedures and objectives (p. 216).</td>
<td>IT steering committee is emphatically identified with the level of IT-related abilities. IT incorporates the foundational systems in the procedures that guarantee that the firm's IT maintains and augments the firm's procedures and objectives (p. 216).</td>
</tr>
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<td>Prasad et al. (2012)</td>
<td></td>
<td></td>
<td>A firm’s IT Governance structures give the platform to better comprehension furthermore, successful utilization of the recently obtained IT assets.</td>
</tr>
<tr>
<td>Raghupathi (2007)</td>
<td>a three stage model of corporate ITG and a grid framework for policies and procedures</td>
<td></td>
<td>how an organization could manage the introduction of comprehensive ITG and the kinds of policies and procedures in such governance</td>
</tr>
<tr>
<td>Rau (2004)</td>
<td>the key roles and relationships in a best-practice IT Governance design</td>
<td></td>
<td>the roles and responsibilities of an IT Governance council, the CIO, IT customer services, the IT project office, and several non-IT roles</td>
</tr>
<tr>
<td>Ribbers, Peterson and Parker</td>
<td></td>
<td></td>
<td>an exploratory study of IT governance processes</td>
</tr>
<tr>
<td>Sallé (2004)</td>
<td>A review the different open and industrial frameworks that support IT organizations / explores their impact on the next generation of IT infrastructure</td>
<td></td>
<td>A review the different open and industrial frameworks that support IT organizations / explores their impact on the next generation of IT infrastructure</td>
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<tr>
<td>Sambamurthy and Zmud (1999)</td>
<td>The theory of multiple contingencies presented how contingency forces affect the mode of IT Governance</td>
<td></td>
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<tr>
<td>Schwarz and Hirschheim (2003)</td>
<td>differences in perceptions toward IT and in the organization of IT activities</td>
<td>differences and similarities between the firms, with respect to IT capabilities, relational and integration mechanisms, measures of success, and relationships with the business units</td>
<td>an approach to managing the IT structure</td>
</tr>
<tr>
<td>Simonsson and Johnson (2006)</td>
<td>provides an IT Governance definition based on a consolidation of literature, the COBIT framework to the definition</td>
<td>provides an IT Governance definition based on a consolidation of literature, the COBIT framework to the definition</td>
<td>provides an IT Governance definition based on a consolidation of literature, the COBIT framework to the definition</td>
</tr>
<tr>
<td>Sohal and Fitzpatrick (2002)</td>
<td>governance and management of IT</td>
<td></td>
<td>presents recommendations for companies in the high, medium and low tier industries</td>
</tr>
<tr>
<td>Tallon et al. (2000)</td>
<td>a model that incorporates corporate goals for IT and management practices as key determinants of realized IT payoffs</td>
<td></td>
<td>management practices such as strategic alignment and IT investment evaluation contribute to higher perceived levels of IT business value</td>
</tr>
<tr>
<td>Trites (2004)</td>
<td></td>
<td>explores the responsibilities that are implicit or explicit in the ITAC brochure</td>
<td></td>
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<tr>
<td>Webb et al. (2006)</td>
<td>explores existing IT governance literature and reveals diverse definitions of IT Governance</td>
<td>explores existing IT governance literature and reveals diverse definitions of IT Governance</td>
<td>explores existing IT Governance literature and reveals diverse definitions of IT Governance</td>
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<tr>
<td>Weill (2004)</td>
<td>Discusses about reinforcement of performance goals and linking IT Governance to the governance of other key enterprise assets and desired behaviors</td>
<td>Defines IT Governance involves specifying decision rights and accountabilities for important IT decisions</td>
<td>Discusses Top-performing enterprises succeed in obtaining value from IT where others fail, in part, by implementing effective IT Governance to support their strategies and institutionalize good practices</td>
</tr>
<tr>
<td>Weill and Ross (2004)</td>
<td>assessment and a one-page framework to help firms design and communicate IT Governance</td>
<td>assessment and a one-page framework to help firms design and communicate IT Governance</td>
<td>assessment and a one-page framework to help firms design and communicate IT Governance</td>
</tr>
<tr>
<td>Weill and Ross (2004)</td>
<td>Ch.1-2</td>
<td>Ch.3</td>
<td>Ch.4</td>
</tr>
<tr>
<td>Weill and Woodham (2002)</td>
<td>critical domains of IT: principles, infrastructure, architecture, and investment and prioritization</td>
<td>who makes decisions and how decisions are made</td>
<td>series of governance mechanisms (e.g., committees, approval processes and organizational forms)</td>
</tr>
<tr>
<td>Willcocks et al. (2006)</td>
<td>Longitudinal research revealed a range of omissions and resulting problems</td>
<td>different challenges arising in organizations of different size and at different stages in their sourcing strategies</td>
<td></td>
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</table>

**Appendix 1**
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<tr>
<th>Author(s) (Year)</th>
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<tr>
<td>Xue et al. (2008)</td>
<td>Identifies governance patterns for information technology investment decision processes and explores the impact of organizations’ investment characteristics, external environment, and internal context on the shaping of those patterns</td>
<td>They analyzed the patterns of 57 IT investment decisions at 6 hospitals and reveal seven IT Governance archetypes</td>
<td></td>
</tr>
<tr>
<td>Total (by each dimension):</td>
<td>25</td>
<td>31</td>
<td>50</td>
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</table>
APPENDIX 2 – RESEARCH PROJECT DESCRIPTION

This appendix presents a copy of the Research Project Description distributed to the research participants back in 2012-2014.
PROJECT TITLE: The Contribution of Information Technology Governance to Delivering Business Value from IT Investments

INVESTIGATORS: Mr. Poorang Haghjoo Department of Computing and Information Systems, University of Melbourne
Prof. Peter Seddon Department of Computing and Information Systems, University of Melbourne
Prof. Rens Scheepers Department of Information Systems, Deakin University

The objective of this study is to explore different types of Information Technology (IT) governance to see which ones are most effective. In particular, the two research questions this research project seeks to address:

1. Do some forms of Information Technology (IT) governance lead to more successful delivery of business value from IT investments?
2. If so, which ones are most effective, and why?

To help answer these questions, we would like to interview you. The interview will last approximately one hour and with your consent, it will be audio-recorded for later analysis. Subject to your permission, we would also like to inspect relevant documents such as business-case documentation, review documentation, your IT-governance framework, and process documentation that help answering these questions.

We do not anticipate any risks to arise from this project. The information you provide will be treated as confidential and used for research purposes connected with this research project only. Confidentiality of the information provided will be protected subject to any legal limitations. Access to the information will be restricted to the investigators only. However, due to the small number of participants in this research project, there is a possibility that individuals can be identified by contextual information.

As required by the University, data will be held in locked cabinets in the Department of Computing and Information Systems, and destroyed using confidential waste disposal techniques after five years following last publication from the research. No individual person or organisation will be identifiable in the research report written up about any case study. Transcripts of interviews will be available to participants in order to verify the contents.

Your participation in the research project is voluntary, and you may withdraw your consent to participate and discontinue participation at any time without prejudice. You may also withdraw any unprocessed data previously provided.

If you have any questions about this research project please contact:

- Mr. Poorang Haghjoo on 0406567396 or Prof. Peter Seddon on 0407984453

If you have any concerns regarding to the conduct of the research please contact the Executive Officer, Human Research Ethics, The University of Melbourne, on ph: 8344 2073, or fax: 9347 6739.
This appendix presents a copy of the Interview Protocol Questionnaire distributed to the research participants back in 2012-2014.
Interview Protocol

Questionnaire

The Contribution of Information Technology Governance to Delivering Business Value from IT Investments

THE SENIOR EXECUTIVE PERSPECTIVE

AUTHOR:

POORANG HAGHJOO

CGEIT, PMP, MCTP, MCPD, MCTS, MCP

PhD Candidate

Department of Computing and Information Systems

Melbourne School of Engineering

University of Melbourne

Supervised by:

Professor Peter B. Seddon

Professor Rens Scheepers
The Contribution of Information Technology Governance to Delivering Business Value from IT Investments

1- What are the IT Governance arrangements in your organization?

2- What do you think makes IT Governance effective and why?

3- Do you think that IT Governance sometimes or always leads to business value from IT investments? Why, How? Can you provide evidence of such causality i.e., any example of an individual Business-IT decision resulted from IT Governance that has led to greater business value (explain more with what measurement tools e.g. balanced score cards are used)?

4- In the given example, did you have any mechanism for deciding what the Business-IT decision is about? Do you think it is important? Please explain.

5- In the given example, did you have any mechanism for clearly deciding who should be involved in making that decision? Do you think it is important? Please explain.

6- In the given example, did you have any mechanism for implementing IT Governance arrangements (did you have mechanisms for deciding how the decision making process needs to be implemented, e.g., through steering committee, IT strategic committee)? Do you think it is important? Please explain.

7- In the given example, do you think that clearly defining what the business-IT decision is about in your IT Governance arrangements, led to any of your organization’s desirable behavior in the use of IT (e.g., cost lowering, customer data sharing, or the stimulation of innovation)?

8- In the given example, do you think that clearly deciding who should be involved in making that decision in your IT Governance arrangements, led to more clarity of accountability and responsibility in mid-operational levels?

9- In the given example, do you think that clearly deciding how the business IT decision making should be implemented, led to more applicable implementation mechanisms?

10- In the given example, do you think your organization’s desirable behavior in the use of IT (e.g., cost lowering, customer data sharing, or the stimulation of innovation) helped IT Governance processes contribute to greater business value from IT investments?

11- In the given example, do you think that clarity of accountability and responsibility in mid-operational levels helped IT Governance processes contribute to greater business value from IT investments?

12- In the given example, do you think that more applicable implementation mechanisms helped IT Governance processes contribute to greater business value from IT investments?

13- Can you provide any example that not addressing any of the items below has caused issues in contribution of IT Governance to greater business value from IT investments? (Would not having any of these three items made any difference?)

- Desirable behaviors in the use of IT

- Clarity of accountability and responsibility in mid/operational levels

- Applicable IT Governance implementation mechanisms
14- Is there any comment that you want to add regarding the contribution of IT Governance to business value from IT investments, e.g., any other moderators that need to be addressed?

The following questions may also be asked if needed to clarify the discussion:

- Does your organization have clear business objectives for IT investments?

- Do you think that IT should be used to reduce costs, increase quality and speed, enhance the effectiveness of the overall performance or extends enterprise's market and geographic reach? Can you recall any examples of attempting to achieve such goals?

- Are business objectives clearly differentiated in your enterprise?

- How are the enterprise strategies defined in your organization?

- How clear are the IT accountabilities in your organization?

- Do your organization’s high-level executives participate in IT Governance? If so, how?

- Does the board in your organization monitor senior executives’ performance and implementation strategy? If so, how?

- How stable is your organization’s IT Governance framework? For example, how many changes have been made and when?

- Does your organization have well-functioning, formal IT-governance exception handling processes in place? Are they effective?

- Are there well defined forms of IT-governance communication in your enterprise? Can you describe any examples of such communication?

- [If it has not already been addressed] Can you provide detail examples of benefits your organizations achieve by implementing ITG?

- Do you agree if the benefits below are among those benefits your organization achieves from implementing ITG? Why?

   1) Strategic alignment between IT and enterprise objectives

   2) Protecting the enterprise's investment in IT

   3) Taking advantage of current business opportunities

   4) Avoiding potential business threats
This appendix presents a copy of the academic conference article that has been resulted from this research project and referred to throughout the thesis, i.e.:

Towards a Better Understanding of How Effective IT Governance Leads to Business Value: A Literature Review and Future Research Directions

Poorang Haghjoo
Department of Computing and Information Systems
The University of Melbourne
Melbourne, Australia
Email: p.haghjoo@student.unimelb.edu.au

Abstract
This paper reviews the existing literature on IT Governance to assess whether IT Governance has contributed to delivering business value from IT and if so, how. The conducted literature review has shown the scarce number of studies that focus on why and how effective IT Governance may lead to business value. By using a structured literature review analysis, the paper has offered a number of insights to the topic of IT Governance: a) provided a systematic definition of effective IT Governance based on a multi-dimensional framework, b) listed benefits of effective IT Governance, and c) identified mechanisms that lead effective IT Governance to those benefits. This paper takes a step towards addressing the ‘why’ and ‘how’ knowledge gaps by synthesising the fragmented knowledge to provide the best that is known about the subject and to identify future research directions.

Keywords
IT Governance, IT Strategy, Business IT Decision Making, Business IT Accountability, Business Value of IT

INTRODUCTION
There have been many failures of large IT investments (Weill and Woodham 2002, Standish 2009). For example, Weill and Woodham (2002) list newly developed applications that were never used properly, e-business projects that were ill-conceived or poorly implemented, and major enterprise resource planning (ERP)-system implementations that were never completed. On the other hand, they also report that returns on IT investments in some enterprises have been above industry average. These successful enterprises make not only better but more effective IT decisions. Moreover, Weill and Woodham (2002) argue that enterprises that make more successful IT investments do so because they have better IT Governance. Later, Weill and Ross (2004) claim that effective IT Governance is the single most important predictor of the value that organisations can generate from IT.

Others have made similar claims about the importance of IT Governance. For example, Lainhart (2000) argues that IT Governance allows an enterprise to more effectively concentrate on major business issues such as ERP and e-commerce and facilitates guaranteeing security, integrity and reliability of organisation’s strategic information. So that effective IT Governance ensures an enterprise benefits from current business opportunities and prevents awaiting business threats. The ultimate goal of IT Governance is to achieve strategic alignment between the business and IT to ensure that IT investments lead to business value (Haes and Van Grembergen 2005).

However, have we ever understood what does the good or effective IT Governance actually mean? Although many studies have claimed that effective IT Governance leads to some benefits, neither the definition of effectiveness in this context has been addressed properly nor the reasoning for ‘why’ and ‘how’ effective IT Governance leads to business value has been argued supported with enough empirical evidence. While the limited number of academic studies on this subject has made this inquiry even more difficult to tackle with. Among the top cited literature on IT Governance (using Google Scholar, effective as June 2012), only three studies have been published in the Senior Scholars’ Basket of Journals on IS (AIS website, June 2012), two in MIS Quarterly (Sambamurthy and Zmud, 1999 and Xue et al. 2008) and one in the Journal of MIS (Tallon et al. 2000).

In a nutshell, there is not enough academic literature that could suggest a comprehensive understanding on IT Governance and even less on effective IT Governance. Confusing terminology used in some studies as well as scattered explanations stress out the fragmentation of research on top of the lack of academic rigour although there are many relevant industry sources. In addition, the link between “effective IT Governance” and “business value” may appear to some as a tautological link, however this paper aims to dig into mechanisms of why and how effective IT Governance leads to business value to ensure unfolding what is happening between the two concepts.
In response to the identified gaps in the literature, this paper reports on results from a literature review that sought to answer the following research questions:

- What is effective IT Governance?
- What are the benefits of effective IT Governance?
- Why and how does effective IT Governance lead to these benefits?

The next section explains the literature review methodology used in this study. Next, definition of IT Governance and what effectiveness means in this context are presented based on a proposed three dimensional framework. The claimed benefits of effective IT Governance are summarised then. Next, the paper synthesises what is known about why and how effective IT Governance leads to business value from IT by modelling prior literature and proposes a new integrative model (EITGBV) based on the literature synthesis. Finally, the paper concludes with a discussion of the findings and deduces a detailed research agenda with future research recommendations.

**LITERATURE REVIEW METHODOLOGY**

Two methods were used in selecting papers for the literature review. First, publications with high citations in total (greater than twenty nine) as well as those with higher citations per year (minimum of five) were selected by filtering the Google Scholar search engine (using Publish or Perish software) with keywords such as “IT Governance”, “Information Technology Governance” and “Governing Information Technology”. However, when looking at only highly cited literature, this might have excluded some useful publications. Therefore, the titles of articles in the Senior Scholars’ Basket of Journals on IS (AIS website, June 2012) were also reviewed. These journals included EJIS, ISJ, ISR, JAIS, JIT, JMIS, JSIS and MISQ. Forty-four studies related to IT Governance were identified through this mechanism, including four books (marked by “#” in the REFERENCES section).

Second, to capture practitioners’ opinions about IT Governance we also searched for industry publications. Influential professional sources (conferences and institutes, e.g., ITGI and ISACA) were identified and the titles of their publications on the topic were reviewed. This search yielded three additional professional studies which are marked by “+” in the REFERENCES section. Thus, overall, 47 publications were selected for content analysis and synthesis. These publications are marked by “*” in the REFERENCES section of this paper. Note that 11 of these 47 studies were authored or co-authored by Peter Weill. So there are fewer independent sources of ideas in this literature review than the publication count of 47 may suggest.

A key finding from the literature review is that research on IT Governance is divided into three core areas. The reading of all 47 publications suggested that the three core dimensions of IT Governance discussed in the literature are a) what the business-IT related decision is about, b) who makes those decisions, and c) how the business-IT decision making arrangements are implemented. Table 1 summarises how frequent these topics were discussed.

<table>
<thead>
<tr>
<th>IT-Governance Dimension</th>
<th>What</th>
<th>Who</th>
<th>How</th>
<th>Total number of publications reviewed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Times discussed in the 47 documents reviewed</td>
<td>24</td>
<td>27</td>
<td>42</td>
<td>47</td>
</tr>
</tbody>
</table>

**EFFECTIVE IT GOVERNANCE**

The three elements of What, Who and How offered a potential pathway for (a) identifying common ground in the literature, and (b) providing greater insight into the meaning of “IT Governance”. Based on this insight, the definition of IT Governance proposed in this study is as follows:

*IT Governance is an organisation’s framework for business-IT decision making. It involves specifying (a) in what domain(s) the decision-making process will be involved, (b) who makes the decisions and who has input to those decisions, and (c) how, i.e., through what mechanisms, these decisions should be made and supervised.*

This definition is a) more comprehensive as it encompasses all three dimensions of IT Governance discussed in the literature, and b) consistent with previous studies which provided a definition of IT Governance (Korac-Kakabadse and Kakabadse 2001, Patel 2003, Sambamurthy and Zmud 1999, Webb et al. 2006 and Weill 2004).

![Effective IT Governance](image)

**Figure 1:** Effective IT Governance leads to business value from IT

The model shown in Figure 1 depicts the knowledge claim by Weill and Woodham (2002) and others mentioned above. The arrow indicates causality in a variance model. This paper explores the link by reviewing and
WHAT BENEFITS DOES EFFECTIVE IT GOVERNANCE PROVIDE?

Claimed benefits of effective IT Governance were scattered among the 47 studies selected for the literature review. The most common benefits are (summarised in column I of Table 3): 1) strategic alignment between IT and enterprise objectives (almost the most agreed upon benefit in the academic literature as well as practitioner’s publications), 2) protecting the enterprise’s investment in IT, 3) taking advantage of current business opportunities, and 4) avoiding potential business threats. Moreover, Better value delivery, improved return on IT investments, improved transparency and accountability are also highlighted repeatedly in the literature.

In addition, although many studies pointed out benefits of effective IT Governance, few explained how these benefits were achieved or provided enough empirical evidence to support their claims. Of the 47 publications, Guldentops (2004), Weill and Ross (2004), Broadbent and Kitzis (2005), and the ISACA-backed NCC (2005) had the most detailed discussions of the benefits of effective IT Governance. The key benefits mentioned in these four studies are summarised in Table 3, however the benefit categories listed in column I relate to the most common benefits reported in all 47 publications, not just the four highlighted.

Table 3. Summary of the benefits of effective IT Governance, as claimed in the literature

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Strategic alignment between IT and enterprise objectives</td>
<td>1. Aligns IT with the business</td>
<td>1. Better focuses IT spending on strategic priorities</td>
<td>1. Synchronises IT strategy with business strategy</td>
<td>1. Performance improvement</td>
</tr>
<tr>
<td>2. Protecting the enterprise's investment in IT</td>
<td>2. Protects shareholder value</td>
<td>2. More than 20 percent higher ROA from IT</td>
<td>2. Builds trust</td>
<td>2. Improved ROI/ stakeholder value</td>
</tr>
</tbody>
</table>

It should be noted here that there is a restriction with the above conclusion. As of the lack of empirical evidence, the measure of potential validity used here was the repeated number of times a particular benefit of IT Governance was claimed. There is a possibility of missing some less often cited benefits which could also be valid. Also, as a result of lack of enough explanation of why and how IT Governance results these benefits, it is possible that indeed some repeatedly stated benefits have been credited to IT Governance by mistake, e.g., benefits of desired...
behaviour in the use of IT. The analysis of how effective IT Governance results the claimed benefits is discussed next.

**EITGBV MODEL**

Based on the literature review, the mechanism through which effective IT Governance leads to greater business value is as shown in Figure 2 below. According to EITGBV (acronym for effective IT Governance and business value) model, the solid arrows represent explicit association and the dotted arrows indicate strong implicit association derived from the literature review analysis. The integrative model builds upon accumulated knowledge to focus on a) the three-dimensional framework for effective IT Governance, b) expected business value from IT Governance and c) moderators of the relationship between effective IT Governance and business value.

![Figure 2 – Effective IT Governance Business Value (EITGBV) Model](image)

We argue that this EITGBV model a) is more comprehensive than previous explanations because it covers all the three dimensions of IT Governance (What, Who and How), b) this model is simpler, i.e. more parsimonious than the previous models, and c) although some authors have provided complex explanations about how effective IT Governance leads to business value, not all are completely correct, e.g., in the Weill and Ross’ (2004) explanation, desirable behaviour in the use of IT directly drives business value but in the model above we argue that desirable behaviour in the use of IT is one of the moderators of the relationship between effective IT Governance and business value. In order to achieve business value from IT, all three moderators need to be in place. In other words, if any of these moderating variables are not there, effective IT Governance will not necessarily lead to business value from IT. Figure 2 contains five constructs defined in Table 4 and seven propositions. The seven propositions in Figure 2 are discussed and justified in the sections below.

**Table 4. Definition of concepts in the EITGBV Model**

<table>
<thead>
<tr>
<th>Construct</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective IT Governance</td>
<td>Refer to Table 2 above</td>
</tr>
<tr>
<td>Business Value</td>
<td>The expected benefits from IT Governance: 1) strategic alignment between IT and enterprise objectives, 2) protecting the enterprise's investment in IT, 3) taking advantage of current business opportunities, and 4) avoiding potential business threats.</td>
</tr>
<tr>
<td>Desirable behaviour in the use of IT</td>
<td>Those behaviours in the use of IT required to achieve outcomes defined by business goals; e.g., cost lowering, customer data sharing, or the stimulation of innovation.</td>
</tr>
<tr>
<td>Clarity of accountability and responsibility in mid/operational levels</td>
<td>Clearly articulating who is responsible for what and who is to be held accountable for what in mid/operational levels of the organisation to achieve improved transparency and accountability.</td>
</tr>
<tr>
<td>Applicability of mechanisms (according to Korac-Kakabade and Kakabadse’s 2001)</td>
<td>Well-designed means of implementing the IT Governance arrangements that lead IT managers and suppliers to assemble business–IT integrated plans, assign responsibilities and accountabilities, define IT priorities, consider business needs, and measure and monitor their performance.</td>
</tr>
</tbody>
</table>

In order to understand better why and how effective IT Governance leads to the discussed benefits, model diagrams were derived from a summary of publications providing such explanations. In these diagrams, presented in Figure 3, 4, 5 and 6, each arrow represents an explicit association in the author’s argument. A comparison of these four figures revealed that although each set of authors provided different explanations of how effective IT Governance leads to business value, some common patterns were evident. E. g., “clarity of accountability and responsibility in mid/operational levels”, and “desirable behaviour in the use of IT” were repeated multiple times.
(a) Effective IT Governance leads to greater business value from IT investments (P1)

As said before, Weill and Ross (2004) claim that effective IT Governance is the single most important predictor of the value organisations generate from IT. Clear objectives in each decision domain (the ‘What’ dimension) help IT Governance to be more effective and improve the enterprise’s performance at several points (Tallon et al. 2001). Identifying who makes business-IT related decisions and who is accountable for what in each decision area (the ‘Who’ dimension) is the first step in designing IT Governance (Weill and Ross 2004). The ‘What’ dimension may also affect the approaches an enterprise selects in the ‘Who’ dimension. According to the literature (Broadbent and Kitzis 2005, Lazić et al. 2011, Van Grembergen 2000 and Weill and Woodham 2003), the procedures and means of implementing IT Governance mechanisms (the ‘How’ dimension) are ultimately critical in making the IT Governance more effective.

Each of the three IT Governance dimensions is embedded in a chain of cause and effect logic that connects effective IT Governance to the organisational benefits and explains the process for transforming intangible assets to the claimed benefits discussed above. Clear objectives in each decision domain (the ‘What’ dimension) place strategy and vision at the top of management’s agenda and proactively create an agreed upon set of objectives among people in an enterprise so that people will buy in and adopt whatever behaviours, and take whatever actions required to achieve these goals. The decisions resulting from the IT Governance arrangements that have carefully considered the three dimensions will direct people in the enterprise towards the overall vision and support or oblige mid/operational managers to concentrate on a handful of applicable mechanisms that are most critical. The right business-IT decision makers (the ‘Who’ dimension) know what the end result should be if they follow clear objectives in each decision domain so they cascade the enterprise’s objective, accountabilities and responsibilities to the enterprise through well designed mechanisms. This leads to true capability of integrating business and IT alignment which is the result of implementing applicable and well-designed mechanisms across the enterprise (the ‘How’ dimension). Once the right people come together through proper business-IT decision making mechanisms, it is more likely that programs which are more aligned to business objectives get priority and be supported in IT investments. So the investments made in IT will be more protected and more aligned to the enterprise’s ultimate business goals. Well-designed mechanisms like allocating resource decisions and applying IS/IT development audits and security policies help to take advantage of current business opportunities, mitigate the risks of potential threats, and safeguard the intangible information assets of the enterprise (Korac-Kakabadse and Kakabadse 2001).

To summarise, IT Governance arrangements that have carefully considered choices about 1) What the business-IT decision is about, 2) Who makes the decision and is to be held accountable for what aspects of the decision, and 3) How the decision making processes are to be implemented will lead to greater business value than IT Governance structures when all three choices are not considered. As explained above and represented in Figure 2, carefully considering all these three choices will lead to the three moderators of the relationship between effective IT Governance and the business value from IT. The ideas discussed above may be summarised as follows:

**Proposition One**: The more effective the IT Governance leads to the greater business value from IT investments only if all three moderators are addressed properly, i.e. only if a) desirable behaviours in the use of IT are developed, b) accountability and responsibility in mid/operational levels is clarified properly, and c) applicable IT Governance mechanisms are in place.

![Figure 3 – Modelling Weill and Ross’ (2004) discussion](image)

(b) The What Dimension and Desirable Behaviour in the Use of IT (P2.A & P2.B)

As defined in Table 4, *desirable behaviour in the use of IT* is “the behaviours in the use of IT required to achieve outcomes defined by business goals”. This concept comes from Weill and Ross (2004) and Broadbent and Kitzis (2005). They all argue that effective IT Governance leads to desirable behaviour in the use of IT. Figure 3 models Weill and Ross’ (2004) argument in detail. They believe that from an IT Governance perspective, enterprise
strategy is a group of clear, concise statements (the ‘What’ dimension) clarifying the enterprise’s strategic goals. These statements express an agreed upon strategy that can be easily communicated. The attention of all employees is focused on simple and achievable messages through strategy, whether or not the employees are part of the strategy making process. Usually, strategy statements articulate one or more of the following: relationships among business units, competitive thrust of the enterprise, objectives for the role and management of information and IT. The enterprise strategy and organisation provide the direction for desirable behaviour (Weill and Ross 2004).

#### Proposition Three

##### (c) The Who Dimension and Clarity of Accountability-Responsibility in Mid/Operational Levels (P3.A & P3.B)

As defined in Table 4, Clarity of accountability and responsibility in mid/operational levels is “Clearly articulating who is responsible for what and who is to be held accountable for what in mid/operational levels of the organisation to achieve improved transparency and accountability”. As discussed before and shown in Figure 4, Broadbent and Kitzis (2005) argue that effective IT Governance builds trust of the leadership by making IT-related decisions transparent. True capability for integrating business and IT can exist only when clear and strong systems of IT Governance exist. Nothing can reduce action to a slow progress as fast as doubt about “who decides what and who’s responsible for what” (the ‘Who’ dimension). Effective synchronising of IT strategy with business context is achieved with good IT Governance (Broadbent and Kitzis 2005). Both the differentiation and integration of IT decision making across business and IT in mid/operational levels of the organisation are the results of effective IT Governance architectures (Peterson 2004). Good governance design requires measurement and accountabilities. Clarity, ownership, and tools to assess IT Governance performance are provided by articulating who is responsible for what (Weill and Ross 2004). Since the ‘Who’ dimension is so important in having a clearer accountability and responsibility in mid/operational levels, the following proposition can be concluded:

**Proposition Three-A:** A clearer ‘Who’ dimension in effective IT Governance will lead to the more clarified accountability and responsibility in mid/operational levels.
Peterson (2004) argues that IT Governance’s structural, process, and relational capabilities direct and coordinate versatile actions related to the planning, arrangement, and control of IT (see Figure 5). Both the allocation of formal IT decision-making authority and the coordination of IT decision-making expertise in mid/operational levels (Schlosser and Wagner 2011) are required to eventually develop organisationally valued skill sets (business and IT), gain improved understanding of business needs and align strategic IT investments with the business strategic objectives (Peterson 2004). How the direct outcomes of effective IT Governance are achieved (in Peterson’s model) is not explained in detail though. This insight may be concluded as the following proposition:

**Proposition Three-B:** Clarity of accountability and responsibility in mid/operational levels will help effective IT Governance lead in turn to more business value returned from IT investments.


As defined in Table 4, *Applicability of mechanisms* is “Well-designed means of implementing the IT Governance arrangements that lead IT managers and suppliers to assemble business–IT integrated plans, assign responsibilities and accountabilities, define IT priorities, consider business needs, and measure and monitor their performance”. The mechanisms (i.e., the ways and means) for making IT related decisions (the ‘How’ dimension) need to be understood and supported across the enterprise. Having effective IT Governance in place, only IT projects in support of business goals and likely to achieve success will be undertaken and assigned resources (Broadbent and Kitzis 2005). This means more applicable mechanisms are implemented across the enterprise. Some mechanisms (the ‘How’ dimension) deal with several types of decisions e.g., the executive committee who makes principal decisions and certain investment decisions; and some mechanisms deal with mainly one type of decision, e.g., the architecture committee who makes architecture decisions (Weill and Ross 2004). Since the ‘How’ dimension is so important in implementing applicable IT Governance mechanisms, it is propositioned that:

**Proposition Four-A:** A clearer ‘How’ dimension in effective IT Governance will lead to the more applicable IT Governance mechanisms.

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As presented in Figure 6, Korac-Kakabadse and Kakabadse (2001) claim that a) guaranteeing that IT supports business objectives, b) making the best use of investments made in IT, and c) evaluating IT-related risks and opportunities properly are the outcomes of effective IT Governance which happen by applicable mechanisms; Mechanisms like approving resource-allocation decisions, applying IS/IT skills, guaranteeing security, reliability of strategic information, protecting IT investments, applying proper safeguards to corporation’s information assets, reacting appropriately against monopolistic manners of IS/IT providers and finally activating IS/IT ethical...
Proposition Four-B: Applicability of IT Governance mechanisms will help effective IT Governance lead in turn to more business value returned from IT investments.

IMPLICATIONS AND CONCLUSION

Since both claimed benefits of effective IT Governance and the reasoning of why-how they are achieved are contingent on the definition of effective IT Governance, as the first contribution of this paper, “Effective IT Governance” arrangements is systematically defined as the soundness of business IT decisions (as explained in Table 2 before) with respect to each of the three dimensions of IT Governance. According to the literature, the three dimensions of IT Governance are: a) in what domain(s) the decision-making process will be involved, b) who makes the decisions and who has input to those decisions, and c) how, i.e., through what mechanisms, these decisions should be made and supervised.

Based on the literature, as the second contribution, the most common benefits of effective IT Governance are identified as 1) strategic alignment between IT and enterprise objectives, 2) protecting the enterprise’s investment in IT, 3) taking advantage of current business opportunities, and 4) avoiding potential business threats.

To clarify the third contribution, this paper provides a clearer understanding of the mechanisms through which effective IT Governance leads to greater organisational benefits by synthesising the best that is known in the literature. A new integrative model (EITGBV) is presented and seven propositions are developed as a result of synthesis and modelling prior explanations. We argue that a) this model is more comprehensive than previous explanations because it covers all the three dimensions of IT Governance discussed in the literature (What, Who and How), b) this model is simpler, i.e. more parsimonious than the previous models, and c) as explained in detail above, although some authors have provided complex explanations, not all are completely correct.

Going one step further, the next knowledge gap is whether the above claimed benefits of effective IT Governance are valid and whether they are the most important ones. The primary contribution a future study could make is to seek empirical evidence to validate the claimed benefits. Also, developing a better understanding of the underlying mechanisms of why-how effective IT Governance leads to business value from IT investments by empirically validating the developed propositions using multiple in-depth case studies would help to enhance the existing knowledgebase. Finally, investigating to see if there is any priority among dimensions of IT Governance or any direct link between them and any particular business value, or if there is any other moderator(s) affecting effective IT Governance leading to business value could also enhance the knowledge and direct the future research in this area.

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23rd Australasian Conference on Information Systems
3-5 Dec 2012, Geelong


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