IT Governance as Requirements and Status of Implementation in Namibia

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Mini-thesis presented in partial fulfillment of the requirements for the degree of Master of Information Technology at the Polytechnic of Namibia.

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Abstract

This study investigates barriers to a successful IT governance implementation. The paper is not purely theoretical but a practical means of looking at ways to increase IT governance efficiency as a guideline to serve as a best practice of IT for better competition in the market.

The implementation of IT governance within organizations in Namibia may help the organizations to successfully achieve their objectives and goals. Organizations will ensure that IT systems and business strategies are aligned, having a common framework between users and solution providers, and evaluate the degree of alignment. As a prerequisite, an organization will have to establish an efficient and effective IT governance implementation.

The research examines whether the results of IT investments ensure that IT programs align with and directly support high-level organizational missions, goals, and objectives of the organizations in Namibia. It also highlights the importance of implementing IT governance and the responsibility of IT strategy alignment in an organization. The study further examines how alignment might be best achieved and sustained, and gives an overview of the awareness and of the implementation status of IT Governance in representative organizations in Namibia.

The findings of this research if implemented appropriately, promote an efficient and effective IT governance implementation in organizations.

Acknowledgements

I owe tribute to a number of people who assisted me in different ways to complete this research.

I would like to thank my uncles and aunts, for providing me with the means to study. They helped me throughout my education up to this point. I would like to thank my brothers, sisters and cousins for all the support they gave me throughout my academic career. To all my friends I say thank you for all the encouragement you gave me when conducting my research.

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Last but not least I dedicate this work to my late grandfather, Mr. Ndakolute Ndilula.

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CHAPTER 1: Introduction

1.1 Introduction

Information Technology (IT) governance is a concept that has suddenly emerged and become an important issue in the information technology field. IT governance is a subject that dominating discussions in IT circles these days. IT governance has inherited much from the corporate governance discipline, but it has developed into a discipline of its own right. Today a shared view on important IT issues and how they should be handled and implemented in an organization is a discussion around the globe.

Exactly when this new challenge began surfacing is unknown. But world wide, many corporations and government agencies began with the implementation of IT governance in order to achieve an alliance between business and IT, and to obtain needed IT involvement of senior management.

IT is critically important to the on going operation of nearly all organizations. In many cases, IT has grown to become one of most valuable assets and is a major driver of success and revenue generation. IT governance is concerned with building, monitoring and reviewing an organization's IT capabilities and that these capabilities need to be in the areas of strategy, benefits and risks involvement (Weill, 2003).

Ken (2005) noted that most organizations that employs mobile workers and execute business using IT primarily for e-mails and Enterprise Resource Planning (ERP) systems. However, it is important to note that the impetus behind IT goes far beyond e-mails and ERP systems.

Organizations are also seeking to connect their work force to business-critical data and processes through ERP systems and internet. Access to back end system information, enterprise data and process infrastructure is essential to increase competitiveness, productivity and efficiency. In such processes the organization gains the advantages of improved response time, faster resolution of customer calls, immediate tracking of warranty information, reduced communication cost and elimination of duplicate data entry, ensuring data accuracy and integrity and balancing workload across all mobile and stationary workers. All of this translates into cost reduction and increased corporate revenues, along with measurable competitive advantage.

De Haes and Van Grembergen (2004) defined IT governance as the leadership and organizational structures, processes and relational mechanisms that ensure that an organization's IT sustains and extends its strategy and objectives. "IT governance is concerned with two issues: IT's delivery of value to the business and mitigation of IT risks. Delivery of value to the business is driven by strategic alignment of IT with the business. Mitigation of IT risks is driven by embedding accountability into the enterprise". Both need to be supported by adequate resources and measures to ensure that the results are obtained (ITGI, 2003).

The rapid growth, the increasing scope of services and the widening of network connections are making changes to the use of ERP systems and internet in the organization. Network and system downtime has become far too costly for any enterprise in these days of doing business globally around the clock, for example, the impact of downtime in the health sector or in banking sector which can lead to the losses of human life or loss in monetary value in terms of banks. The risks factor is accompanied by a wide spectrum of external threats, such as omissions, abuse, and fraud, cyber crime and system errors.

It can be noted in the literature review chapter page twenty two (22) paragraph two (2) that historically, IT did not play the important role it does now as organizations did not care much whether they had IT systems or not. Moreover, IT in some organizations is viewed as the technical core of the management information systems function. However, the widespread feeling is that IT has very little to do with organization business strategy. This is because some organization management views IT as a "cost of doing business".

1.2 Statement of the Problem

This research examines whether the results of IT investments ensure that IT programs align with and directly support high-level organizational missions, goals and objectives of the organizations in Namibia. The thesis highlights the importance of implementing IT governance in an organization. It also examines the responsibility of IT strategy alignment and how alignment might be best achieved and sustained.

Another goal of this research is to find out, whether IT goals and objectives are conforming to the IT purpose statement. It further attempts to discover whether IT goals and objectives are clearly linked to organization goals and objectives within Namibian organizations.

Often there is no Business IT Alignment between the business strategy and IT strategy which will bridge the gap between business management and IT governance as IT is growing faster. Therefore, there is an indicated need to show how successful IT governance can or will optimise the organization's productivity and make the organization understand better the shared IT strategies with business strategies.

Weill (2003) acknowledges that demand for new use of IT comes from talented people in all areas of the enterprise. IT governance is linked to corporate governance. Top performing organizations govern IT differently, so there is a need for a re-think on IT governance by setting visions, making right decisions, assessing and managing risks, having clear accountabilities and desirable behaviours. IT governance is performed differently due to IT costs, IT growth, assets utilization and IT contribution to business flexibility.

The impression is that in many organizations, the use of ERP systems and internet is spreading faster than expected (Cangemi, 2006). ERP provides a distinct advantage in that it allows information to be exchanged anywhere anytime in the organization. However, a major problem is that most of the organizations lack IT governance. Another problem is that most businesses have managers in leadership positions who cannot accurately describe IT and the governance arrangements. This is due to less involvement in IT governance as well as lack of knowledge in IT. Some businesses have unclear business objectives for IT investment and have more changes in governance from year to year, and most of them do not have clear IT governance mechanisms in place (ITGI, 2005).

1.3 Motivation of Study

The major aim of this research is to investigate the greatest barriers to a successful IT governance implementation. The study is not purely theoretical, but a practical means of looking at ways of increasing IT governance efficiency in organizations in order for them to cope with growing competition in the market.

Khong (2006) stated that it is projected that in the next two decades, IT will have developed tremendously, therefore, organizations should keep updated with IT's phenomenal growth and development. The researcher's observation is that many organizations seem not to take IT seriously in Namibia.

1.4 Focus, Scope and Objectives of study

The focus of the thesis is based on the following; Control Objectives for Information and related Technology (COBIT) 4.0 (2005), Information Technology Infrastructure Library (ITIL), International Standard Organization (ISO) and IT Governance Institute in which IT governance implementer can access vital information. Specific focus is given on IT governance implementation framework information that is relevant and reliable. This in turn informs and guides an IT governance implementer on what to do during the process that will ultimately improve business operations.

The research has been limited to issues related to the knowledge of an IT expert, finance personnel and business management, and information about strategic alignments and the contribution of IT governance in bridging the gap between IT and business experts rather than widening that gap.

As mentioned early the focus of the study is on IT governance as requirements and status of implementation in Namibia but it is also important that Finance and IT professionals are able to communicate with one another. This enables the exchange of vital information and more importantly, makes it possible for Finance professionals to contribute their financial experience to the IT governance

implementation process. A good IT governance in an organization results in more accurate and timely financial reporting.

1.5 Structure of the Thesis

Chapter one is the introduction to the research project. The chapter highlights the research problem which is the importance of aligning business strategies with IT strategies and how it can assist an organization to achieve its objective. In addition, the focus, scope and the objectives of the study is presented.

Chapter Two presents a review of literature related to the topic. Most of the literature reviewed is from institutions such as Information Technology Governance Institute (ITGI), Institute of Internal Audit and Information Systems Audit and Control Association (ISACA). The literature review includes the following among other issues, IT governance definition, the benefit of IT governance, alignment of business and IT strategy, challenge on IT governance implementation framework and investment in information technology. Further, Chapter Two discusses the problems faced in the IT sector with regards to IT governance implementation.

The purpose of Chapter Three is to provide the scientific basis for the research. Chapter Three also explains the reasons for using the various methods or techniques and explains the advantages and the disadvantages of these techniques. The instrument used in the research project is discussed in detail. In addition, the author outlines the relevance of the questions asked in the questionnaire.

Chapter Four deals with the analysis and presentation of the data collected using a questionnaire. The author explains the relevance of the findings.

Chapter Five makes recommendations for future study. Conclusions are also drawn in this final chapter.

1.6 Conclusions

This chapter has provided the general outline of the study. The scope, objectives and focus of the study have been laid out. Finally, this chapter introduced the topics to follow, that are important for the proper understanding of IT governance to deliver an alternate alignment of business strategies and IT strategies and ultimately add value to the achievement of business objectives and goals.

CHAPTER 2: Literature Review

2.1 Introduction

In the early 1960s, IT departments were seen as refuges for "nerds" operating far outside the mainstream. Culturally, computer scientists and technicians running IT had little in common with other business executives in terms of education or shared experiences. Therefore, it was difficult for the two groups to relate to each other. Consequently "People in other departments were totally unfamiliar with what was going on in IT" (Sutter, 2006).

Additionally, because the information technology was less complicated in those days, IT personnel spent more of their time just trying to make it work and had little time to worry about the business goals of their organization. Although IT has always been a demanding area that forces you to work nights and weekends, in those days it took you away from everything else (Sutter, 2006).

The fulfilment of an organization's goals and objectives seems far from reality as the gap and alignment of business and IT strategies that can facilitate the achievement of such goals and objectives are widened. This is because IT is still regarded as a "cost of doing business".

ITGI (2006) stated that "IT is no longer an enabler of corporate strategy; as it is now the key element of corporate strategy". Governance had explored how some of the world's most successful organizations have integrated information technology with business strategies, culture and ethics, to optimize information value, attain

business objectives and capitalize on technologies in highly competitive environments.

ITGI (2006) noted that the purpose of IT governance is to direct IT endeavours, and to ensure that its performance meets the following objectives:

- alignment of IT with the enterprise and realization of the promised benefit;
- use of IT to strengthen the enterprise by exploiting opportunities and maximizing benefit;
- to foster responsibility in the use of the IT resources;
- to promote appropriate management of IT related threats.

IT governance usually arises at different layers, with team leaders reporting to and receiving direction from their managers, with managers reporting up to the executive, and the executive to the board of directors (ITGI, 2006).

This can clearly be illustrated by the communication of objectives and IT activities from an IT governance point of view as illustrated in **Figure 2.1** below:

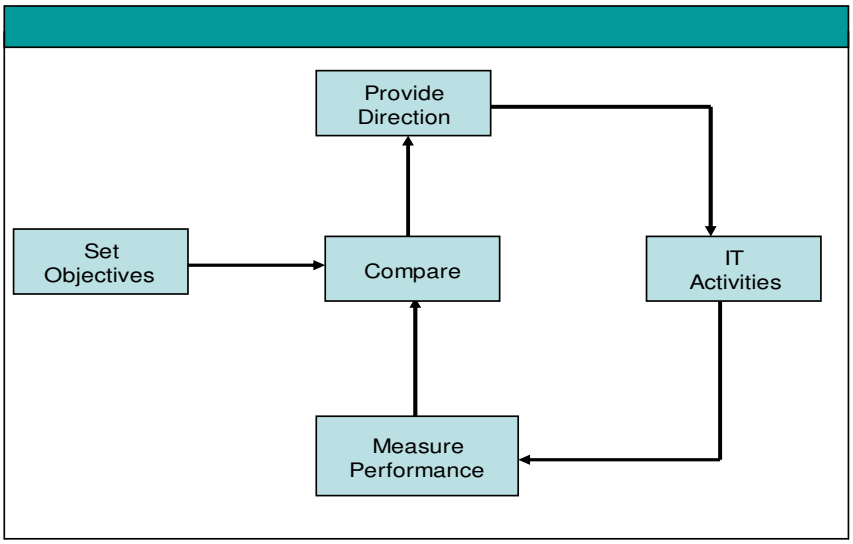

Figure 2.1, Interaction of Objectives and IT Activities

ITGI (2006), *COBIT MAPPING: Overview of international IT guidance, 2nd Edition*.

Figure 2.1 gives a clear picture as to how business objectives and IT activities work in partnership with each other by setting clear and understandable objectives. This process begins with objective setting for the business's IT. A continuous loop is established to performance measurement, in comparing the objectives, and resulting in the redirection of activities where required and a change in objectives where suitable.

IT functions need to focus on: the realization of benefits by increasing automation and making the enterprise more effective. This is done by decreasing costs and managing risks to make enterprise more efficient (ITGI, 2006).

The IT governance framework can then be described in detailed as indicated in **Figure 2.2** below:

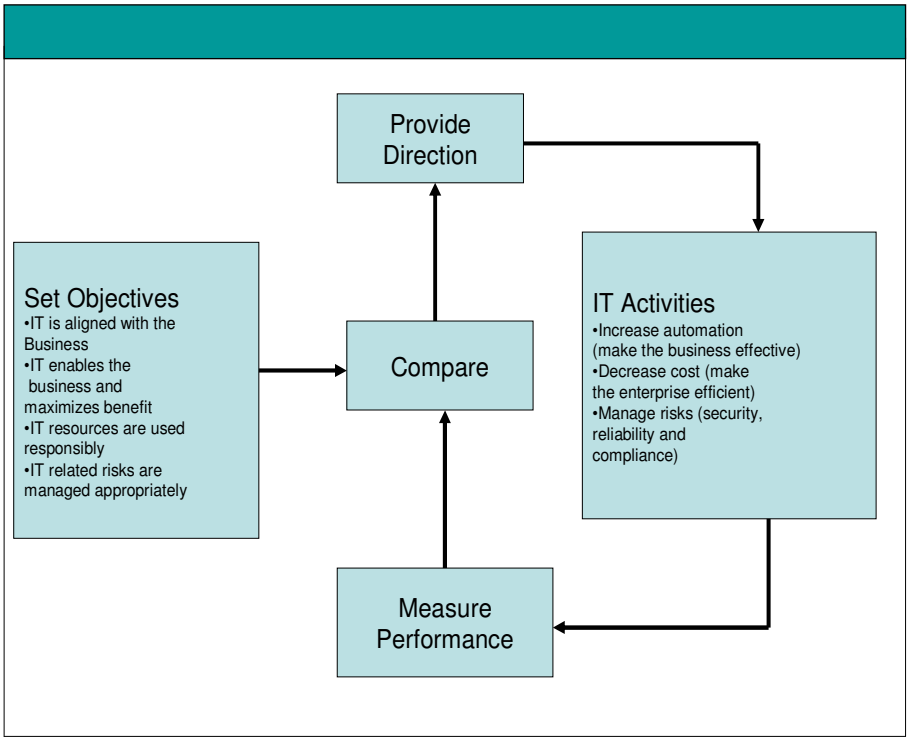

Figure 2.2, IT Governance Framework

ITGI (2006), *COBIT MAPPING: Overview of international IT guidance, 2nd Edition*.

Figure 2.2 is an expansion of Figure 2.1 to give a detailed framework of IT governance on how the organization sets up objectives and assesses the interaction of objectives with IT activities and measure performances and give directives.

Broadbent and Weill (1998) describe different difficulties that organizations have experienced in aligning business with IT.

Firstly: "there is the expression that occurs from the organization's strategic context and from senior management behaviours, including lack of direction in business strategy and changing strategic purposes. These results are inadequate sympathetic of and assurance to the organization's strategic focus by operational management".

Secondly: "specification difficulty that arises from the conditions of the organization's IT strategy, which ends up in a situation where business and IT strategies are set in isolation and not adequately related".

Thirdly: "the nature of the organizations that currently have IT portfolio that creates implementation barriers, which arise when there are technical, political, or financial constraints on the current infrastructures".

The pressure caused by these difficulties on the organization has encouraged focus on increasing usage of the information technology, ERP system, systems security and internet. Therefore, IT standards were introduced or established to assist organizations in overcoming those difficulties. Three of them are described in detail in the next section.

2.1.1 Three Primary IT Standards

COBIT, ISO 17799 and ITIL are the main standards that are generally acceptable, when dealing with the above difficulties They have also a set of leading practices for IT process, promoting a quality approach to

achieving business effectiveness and efficiency in the use of IT systems.

- **COBIT** -- The Control Objectives for Information and related Technology (COBIT) standard available at www.itigi.org is now in its third revision and is published by the Information Systems Audit and Control Association (ISACA) and was originally released in 1996. The COBIT framework are comprises 34 high-level control objectives and 318 detailed control objectives that have been designed to help businesses maintain effective control over IT (Spafford, 2003).

  COBIT framework is developed by ISACA, whose mission is to research, develop, publicise and promote an authoritative, up to date, international set of generally accepted information technology control objectives for day to day use by business managers, IT professionals and assurance professionals (ITGI, 2006).

  COBIT is an IT governance framework and supporting toolset that allows managers to bridge the gap between control requirements, technical issues and business risks. COBIT enables clear policy development and good practice for IT control throughout organizations. ITGI's latest version COBIT® 4.0 available at www.itigi.org emphasizes regulatory compliance that will help organizations to increase the value attained from IT. It also enables alignment, standardises IT process, unifies its processes, obtain desired IT cost control initiatives, complies with external requirements and simplifies implementation of the COBIT framework.

  However, ITGI (2006) highlighted some related risks of non-compliance that might occur when organizations implementing IT governance failed to consider COBIT in the process. The risks are:

    - misalignment of IT services (divergence);
    - dissatisfaction of business users with IT services supplied;
    - persistence of the perception of IT as a black box;
    - Shortfall between managements and expectations;

- excessive cost and overhead;
- know-how tied to key individuals, not to the organization;
- erroneous investment decisions and projections;
- weak support of business goals due to misalignment; and
- wasted opportunities due to misalignments.

- **ISO 17799** -- The International Organization for Standardization's (ISO) 17799, titled "Information Technology available at http://macassist.com - Code of Practice for Information Security Management," was first released by the ISO in December 2000. It is based on the British Standard 7799 that has quite a lineage, but solidified under the BS 7799 identifier started in 1995 and finalized in 1999, this will become part of ISO 27000. The intent of the standard is to provide information to parties responsible for implementing information security within an organization and assist an organization in the creation of an effective IT security plan. The standard has the following high-level groupings: security policy, organizational security, asset classification and control, personnel security, physical and environmental security, communications and operations management, access control, systems development and maintenance, business continuity management and compliance (Spafford, 2003). It is also usually implemented subject to many of the following business cases (ITGI, 2006):
    - defining responsibility and organizational structures for information security;
    - identifying critical assets via the business risk assessment;
    - enhancing the knowledge and importance of security related issues at the management level; and
    - defining an information security management system and applying best practice in security management based on a systematic approach.

The following risks of non compliance might occur if the standard is not very well-done and covers a great deal of material in a concise manner (ITGI, 2006):

- inadequate business continuity management;
- lack of security awareness within the organization;
- incomplete risk assessment, thus an inadequate level of risk management;
- inadequate level of physical and logical security;
- flawed procedures due to lack of incident management; and
- inadequate security requirement when interacting with a third-party organization.

- **ITIL** -- The Information Technology Infrastructure Library (ITIL) available at www.itil.co.uk is maintained by the United Kingdom's Office of Government Commerce (OGC) and was developed with the input of many organizations beginning in the late 1980s. ITIL is a series of eight books and is referred to as the only consistent and comprehensive best practice of IT service management to deliver high quality IT services. The "library" currently consists of eight books: service support, service delivery, security management, application management, ICT infrastructure management, Software Asset Management, the business perspective and planning to implement service management. ITIL is very much aimed at identifying best practices with regards to managing IT service levels, implementation of a central help desk function, defining of service processes within the IT organization, focus on the customer of the IT and defining and improving the quality of services of organizations (Spafford, 2003).

  Although this standard has been identified as consistent best practice of IT service, it has little risk of non-compliance with regards to IT governance implementation and such risk is the error-prone support

process due to the lack of attention to ITIL in the implementations process.

2.1.2 The Benefits of IT Standards

According to Spafford (2003) there are a number of compelling reasons to adopt a defined IT standard:

1. **The Wheel Exists** -- In today's world, time is a precious commodity. Why spend all of the time and effort to develop a framework based on limited experience when internationally developed standards already exist? It is better to make use of those existing and tested standard instead of trying to invent new frameworks of similar purposes.
2. **Structured** -- The framework of the models provides an excellent structure that organizations can follow.
3. **Best Practices** -- The standards have been developed over time and assessed by hundreds of people and organizations all over the world. The cumulative years of experience reflected in the models cannot be matched by a single organization's efforts.
4. **Knowledge Sharing** -- By following set standards, people can share ideas between organizations, profit from user groups, Web sites, magazines, books and so on.
5. **Auditable** -- Without standards, it becomes far more difficult for auditors, especially third-party auditors, to effectively assess control.

There isn't a great deal of overlap among the three standards. COBIT is strong in IT controls and metrics. ISO 17799 covers IT security quite well and ITIL emphasizes processes, notably those surrounding the IT helpdesk.

Therefore, rather than select one, organizations would be wise to get an overview of the three and then plan an approach that blends the best practices of each along with the needs of the organization. The reason for not relying only on one of these is that COBIT, ISO 17799 and ITIL all serve as excellent frameworks which improve IT governance.

2.2 Definition of IT governance

Information Technology Governance is the art and science of directing organizational behaviour in a manner consistent with a set of goals and desired results. The elements of effective governance include:

- repeatable and efficient execution methodologies;
- comprehensible and agile decision-making processes;
- management oversight policies.

IT governance, as defined by the ITGI (2006), is the "set of responsibilities and practices exercised by the board and executive management with the goal of providing strategic direction, ensuring that objectives are achieved, ascertaining that risks are managed appropriately and verifying that the enterprise's resources are used responsibly".

De Haes and Van Grembergen (2004) define IT governance as the organizational capacity exercised by the board, executive management and IT management to control the formulation and implementation of IT strategy and the fusion of business and IT.

Weill and Ross (2005) define IT governance as a decision right and accountability frame work used to encourage desirable behaviours in the use of IT and to provide IT based services. IT governance is not just good governance as such, but governance efficiency to ensure that

decision-making relating to IT and its components takes place timeously, efficiently and effectively. Good governance is getting investments to steer the course in their strategies and establishing a strong frame work to ensure governance efficiency.

According to Burget (2002) “IT governance is an integral part of corporate governance and analogously combines leadership, organizational structures and process that ensure that IT sustains and extends the organization’s strategies and objectives. IT governance provides guidelines, establishes criteria and standards for decision making, monitoring, measuring and improving the performance of IT”.

IT governance is the responsibility of the executive board and the executive management (including IT) that supports the interaction of all the organization’s parties involved with IT. According to ITGI (2003) “IT governance is an integral part of enterprise governance and consists of the leadership and organizational structures and processes that ensure that the organization’s IT sustain and extends the organization’s strategies and objectives”.

In some IT governance definitions, it was indicated that IT management must be involved in the IT governance process. Moreover, there is a clear difference between IT governance and IT management. IT management is more focused on the effective supply of IT services and products as well as the management of IT operations. IT governance is much broader and concentrates more on performing and transforming IT to meet present and future demands of the business and its customers. The definition from ITGI states that IT governance is integral part of enterprise or corporate governance. To make sure that corporate governance matters are covered, IT needs first to be properly governed.

This relationship can be made clearer by translating the corporate governance questions into specific IT governance questions as illustrated by the following **Figure 2.3**

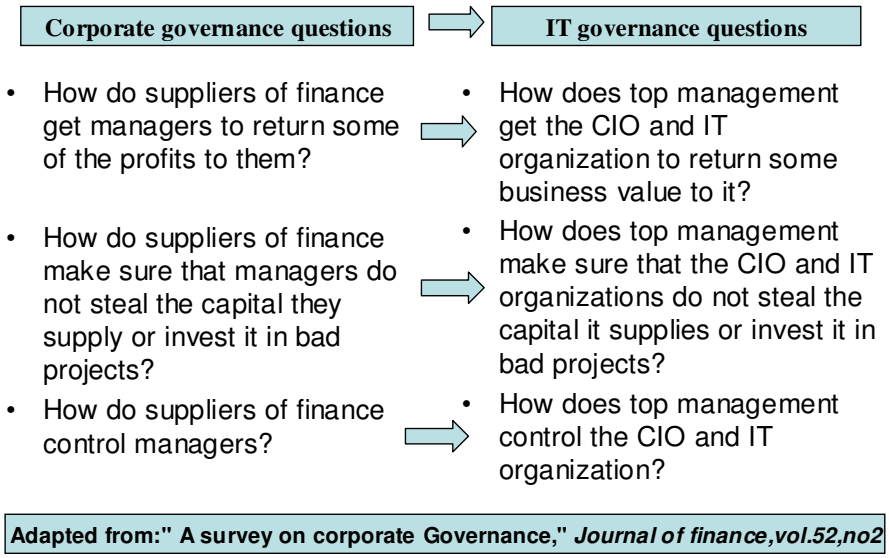

Figure 2.3, IT governance and corporate governance questions

Ernest and Musson (2003), *Exploring the board's perspective.*

Figure 2.3 shows how corporate governance can be translated into IT governance, that will assist the organizations to narrate and marry the two, once, the enterprise manage to translate corporate governance to IT governance, then implementation of IT governance will be understandable and might be realised.

Although numerous definitions of IT governance differ in some aspects, they all focus on the same issues of achieving the link between business and IT and the primary responsibility of the board and executive managements.

This research has adopted the definition that can be found in the executive summary of COBIT, which identifies IT governance as "a structure of relationships and processes to direct and control the enterprise in order to achieve the enterprise's goals by adding value while balancing risk versus return over IT and its processes."

2.3 Importance of IT governance

IT is fundamental for managing organization resources, dealing with suppliers and customers, and enabling increasingly global and dematerialized transactions. IT also is a key for recording and disseminating business knowledge (ITGI, 2006).

Khong (2006) observes that with IT becoming more pervasive in business processes, IT governance is increasingly important as it affects the performance of a business in terms of its profitability and quality of its products.

Although it has been stated on the problem statement in section 1.2, it is still worth mentioning the importance of IT governance here. There is great need for new use of IT by people in all areas of an organization. IT governance is linked to corporate governance. Top performing organizations govern IT differently from least performing organizations. There is a need to re-think on IT governance by setting a vision; making the right decision, assessing and managing risks, and fostering clear accountabilities and desirable behaviours. IT governance performs differently due to IT costs, IT growth, assets utilization and IT contribution to business flexibility (Weill, 2003).

The use of IT has the potential to be the major driver of economic wealth in the 21st century. IT is already critical to enterprise success. It provides opportunities to obtain a competitive advantage and offers a means for increasing productivity. There are prospects of doing all this even more in the future. Leveraging IT successfully to transform the enterprise and create value added products and services has become a universal business competency as well.

IT governance pays special attention to IT by reviewing how strongly the enterprise relies on IT and how critical IT is on the business strategy. Businesses lend their successes to IT mainly because:

- IT is critical in supporting and enabling enterprise goals;
- IT is strategic to the business growth and innovation; and
- due diligence is increasingly required relative to the IT implications of mergers and acquisitions (ITGI, 2006).

Organizations need to know that ineffective IT governance is likely to be a root cause of the negative experiences many boards have had with IT namely:

- business losses, damaged reputations or weakened competitive positions;
- deadlines not being met, costs becoming higher than expected and quality getting lower than anticipated;
- enterprise efficiency and core processes are negatively impacted by poor quality of IT deliverables;
- failures of IT initiatives to bring innovation or deliver the promised benefits.

Lastly, IT governance is important as very often expectation and reality do not match as boards usually expect management to:

- deliver IT solutions of the right quality, on time and on budget;

- harness and exploit IT to return business value;
- leverage IT to increase efficiency and productivity while managing IT risks (ITGI, 2006).

IT governance is needed to ensure that the investments in IT will generate the required business value and risks associated with IT are mitigated (Crawford, 2006).

2.4 IT governance coverage

IT governance covers five main focus areas, which are all driven by stakeholder value. The five areas are value delivery and risk management (outcomes) and other three areas are strategic alignment, resource management and performance measures (drivers). They are illustrated in **Figure 2.4** below:

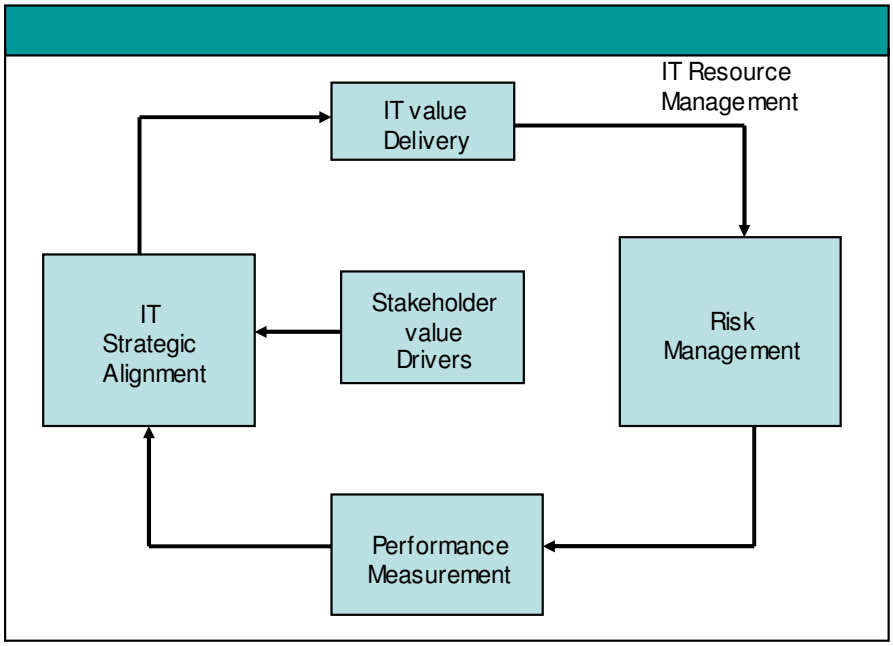

Figure 2.4, Focus Areas of IT Governance
ITGI (2006), *Board briefing on IT governance*.

The above shows the relationship between two elements which are the value delivery and strategic alignment with the introduction of associate elements (risk management and performance measurement) that are not directly mentioned in the IT governance definitions, but play an important role in the governance of IT.

This life cycle does not take place in a vacuum. Each enterprise operates in an environment that is influenced by:

- stakeholder values;
- the mission, vision and values of the enterprise;
- the community and company ethics and culture;
- applicable laws, regulations and policies; and
- industry practices.

IT governance is also a process in which the IT strategy drives the IT processes which obtain resources necessary to execute their responsibilities. The IT processes report against these responsibilities on process outcome, performance, risks mitigated and accepted, and resource consumed. These reports should either confirm that the strategy is properly executed or provides indications that the strategic redirection is required as illustrated by **Figure 2.5** below:

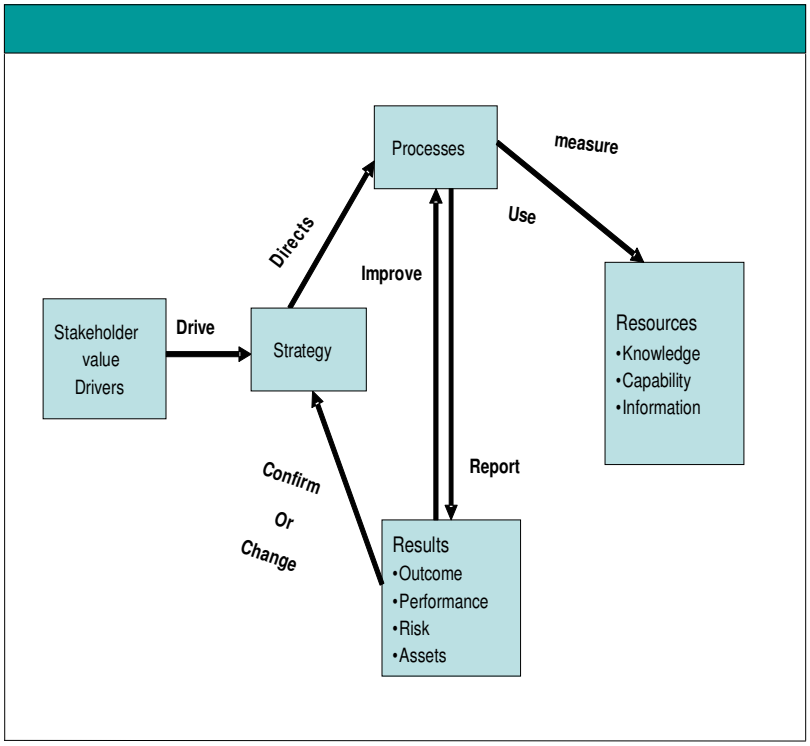

Figure 2.5, IT Governance Process

ITGI (2006), *Board briefing on IT governance*.

Figure 2.5, indicates the activities performed in the IT governance process and how IT process report against these activities on process outcome, performance, risks mitigation and accepted, and resources consumed.

The issues shown in Figure 2.5 clearly map onto the IT governance areas as described below:

- **strategic alignment**, with focus on aligning with the business and collaborative solutions;
- **value delivery**, concentrating on optimizing expenses and proving the value of IT;

- **risk management**, addressing the safeguarding of IT assets, disaster recovery and continuity of operation;
- **resource management**, optimizing knowledge and IT infrastructure (none of the above factors can be managed appropriately without);
- **performance measurement**, tracking project delivery and monitoring IT services.

It is perhaps an axiom that the role and impact of information technology (IT) on today's organizations has significantly changed over the last decade. Across a wide spectrum of markets and countries, IT is transcending its traditional "back office" role and is evolving toward a "strategic" role with the potential not only to support chosen business strategies, but also to shape new business strategies, (COBIT 4.0, 2005).

Historically, IT is a support function not essential to the business of the organization. But IT in some organizations is viewed as the technical core of the management information systems function. However, the widespread feeling is that IT has very little to do with the organization business strategy. This is because some organization management views IT as a "cost of doing business".

Henderson and Venkatraman (1999) note that as businesses around the world strengthen corporate responsibility and internal control structure, the need for direction on effective governance over information technology is critical. Therefore, senior management and technical professional need to bridge the gaps in business risks, control needs and technical issues. That guidance is needed to help managers to assess, select and measure the performance of controls and improvements over IT sector.

IT governance guidance will be on maturity models, critical success factors, key business goal indicators, key performance indicators and detailed control objectives with policies, procedure practices and organizational responsibilities.

With the widespread use of Information Technology Systems (ITS), from mainframe through client – server environments, it is important that controls or governance are in place. The Sarbanes – Oxley Act was created to restore investor confidence in public markets. The Act aims to enhance corporate governance through measures that will strengthen internal checks and balances and, ultimately, strengthen corporate accountability. Sarbanes – Oxley Act makes corporate executives explicitly responsible for establishing, evaluating and monitoring the effectiveness of internal control over financial reporting. For most organization, the role of IT will be crucial to achieving these objectives (Valiquette, 2006).

2.5 Alignment of business and IT strategies in the organizations

According to ITGI (2005) over the last 30 years there have been calls for an entity's IT strategy to be formally aligned with business strategy. As this has often been understood that business strategy is prepared and agreed first and the IT strategy is then build in response to it. However, in today's world where IT goes beyond a mere support role and provides the enablement of new business models, the responsive and reactive approach is no longer sufficient, as in some cases, the IT strategy may even become the business strategy. Therefore, the two elements (business and IT strategies) are regarded as inseparable, with the consequent need to be thinking IT in every aspect and at every stage of the business strategy development.

According to Claude (2006) there are six step processes for alignments. These are:

- set the goals and establish a team;
- understand the business IT linkage;
- analyse and prioritise gaps;
- specify the actions (project management);
- choose and evaluate success criteria; and
- sustain alignment.

Alignment of business and IT strategies involve making the services provided by the corporate IT function more closely reflect the requirements and desires of the business users. Price WaterHouseCoopers, on behalf of ITGI in 2003, highlighted the top seven IT related issues that were being faced by corporate executives due to lack of alignment. The issues are:

- inability of the business to reach its full potential;
- failure to identify and capitalize upon business opportunities that could be enabled by IT;
- potentially higher operating costs and therefore, competitive disadvantages due to failure to replace expensive labour-led processes with lower-cost automation;
- incorrect and ineffective focusing of IT- related resources;
- inability to recruit and retain high quality IT and business personnel;
- higher cost overall; and
- erosion of stakeholder value over time.

Since the age of vacuum tubes, dot matrix printers and green-screen monitors, IT executives have been obsessed with the concept of alignment. The aim was to find out how closely an organization's IT strategy is interwoven with and driving its overall business strategy.

Cangemi (2006) defines what exactly strategic alignment between the business and IT is. The author's definition is: "the process and goals of achieving competitive advantage through developing and sustaining a symbiotic relationship between business and IT." The idea behind strategic alignment is very comprehensive, but the question is how organizations can achieve this ultimate goal.

Henderson and Venkatraman (1999) developed a Strategic Alignment Model (SAM) to conceptualise and direct the area of strategic management of information technology as illustrated in **Figure 2.6** below.

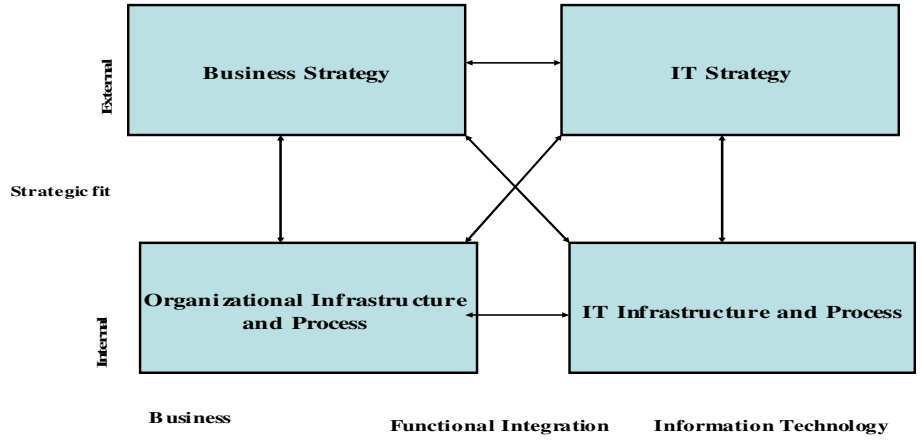

Figure 2.6, Strategic Alignment Models

Henderson and Venkatraman, (1999) *Leveraging information technology transforming organizations.*

The SAM concept in the above figure is based on two building blocks: strategic fit and functional integration. Strategic fit recognises that IT strategy should be articulated in terms of an external domain, how the enterprise is positioned in the IT market place and an internal domain, how the IT infrastructure should be configured and managed. The functional integration recognise two types of integration which consider how choices made in the IT domain enhance or threaten those made in

the business domain and vice versa. Therefore, in order to have an effective governance of IT, a balance among the choice made in all the four SAM domains is required.

Based on Figure 2.6, Henderson and Venkatraman (1999) argue that the external and internal domains are equally important, but that managers habitually think of IT strategy in terms of the internal domain, since previously IT was viewed as a support function less essential to the business.

Figure 2.7 illustrates the point Henderson and Venkatraman (1999) are advancing. It shows how SAM works in aligning the IT and business strategies and take away the concept most organizations has that “IT is a support function less essential to the business”. The most important premise of the Strategic Alignment Model in figure 2.7 is that effective governance of IT requires a balance among the choices made in all the four domains.

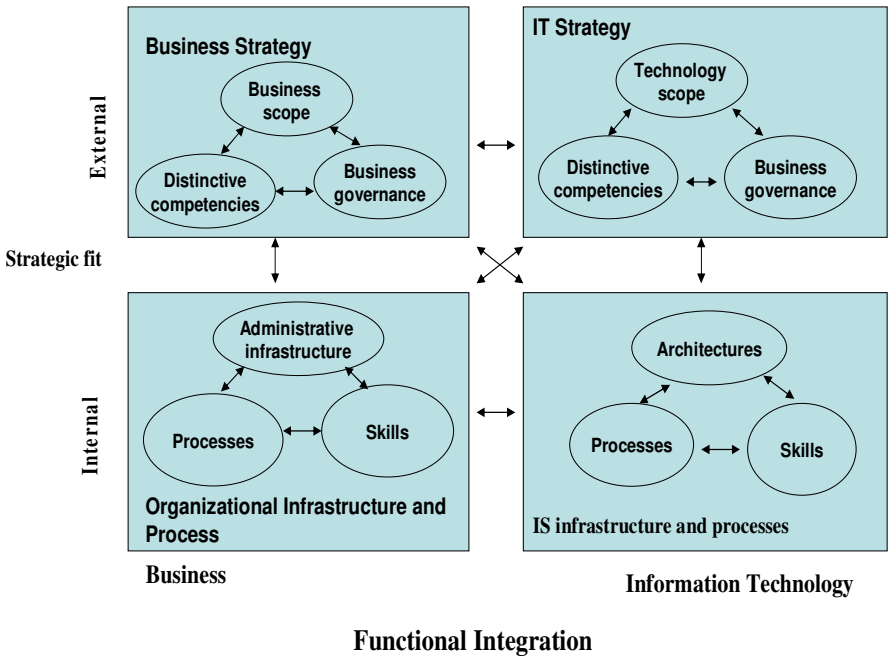

Figure 2.7, Strategic Alignment Models

Henderson and Venkatraman (1999), *Leveraging information technology transforming organizations.*

According to the ITGI (2006), the key question in governance of IT is whether an enterprise's investment in IT is in harmony with its strategic objectives. Alignment of IT has been synonymous with IT strategy. It is also about whether IT operations are aligned with the current enterprise operations as demonstrated in **Figure 2.8** below. Of course, it is difficult to achieve IT alignment when enterprise units are misaligned.

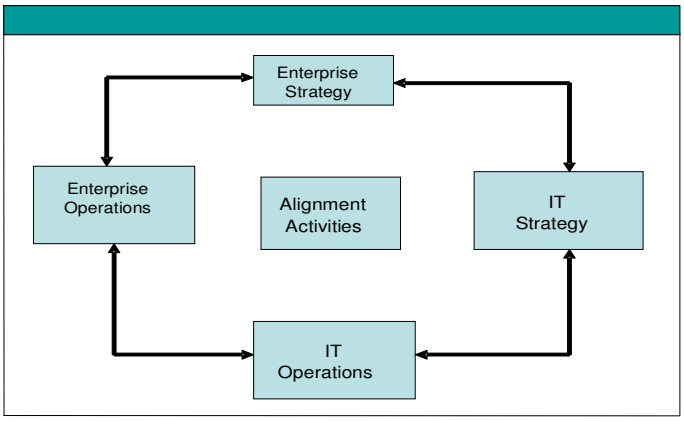

Figure 2.8, IT / Enterprise Alignment

ITGI (2006), *Board briefing on IT governance*.

IT alignment is elaborated more by the above Figure 2.8. It shows how IT governance alignment encompasses more than strategic integration between the (future) IT organization and the (future) enterprise organization, and how IT operations are aligned with the current enterprise operations.

Most successful companies view IT as an essential component of their business strategy and their Chief Information Officers (CIOs) are increasingly reporting directly to the Chief Executive Officer (CEO) instead of the Chef Financial Officer (CFO). They are getting a solid budget and being empowered to run with it. Some companies are also

integrating IT with other departments. This directly aligns IT managers with their colleagues in marketing or operations, where they are gathering on a regular basis to collectively discuss the strategic needs of the organization. CIOs are increasingly being viewed as corporate leaders as they help drive business strategy and achieve business goals from their seats on executive committees. The alignment organizations achieved has not happened in a vacuum, as the outside forces have created the need for alignment and the biggest outside force is clearly the Internet. As companies rush to beat their competitors to the Web, the CIO is the one with all the technical expertise and become the obvious strategic player. However, the stakes are huge, and failure can be devastating.

Moreover, in most organizations senior management did little to try and bring IT in line with what it felt was important, so IT remained marginalized and other executives remained sceptical of its value (Teoh, 2006).

Broadbent and Weill (1998) describe different barriers that organizations have experienced in aligning business strategy with IT. The expression barriers arise from the organization's strategic context and from senior management behaviour, including lack of direction in business strategy and changing strategic intents. Specification barriers arise from the circumstances of the organization's IT strategy which ends up in a situation where business and IT strategies are set in isolation and not adequately related. The nature of the current IT portfolio in organization creates implementation barriers, which arise when there are technical, political, or financial constraints on the current infrastructure.

2.6 Benefit of IT governance to the organizations

IT governance provides cost reduction in an organization by reducing the charge-out rates to the business; it is an instrument that an organization can use in influencing important cost factors and in setting organization priorities. Furthermore, it saves time and it helps the enterprise to define all the elements in preparing valid quotes, going toward better credibility for the businesses.

Other benefits are transparency and clarity about roles and responsibilities. Business processes operate more fluently effectively and there is accountability. IT governance is a business supporting component instead of a technology driven development.

Good IT governance benefits the organization in numbers of ways. The organization is able to:

- align technology investments with key initiatives;
- easily prioritize, maximize the value of and minimize the risk of all types of IT investments;
- manage outsourcing strategies;
- allow planners to schedule resources more efficiently;
- develop business optimized security and service level policies;
- reduce redundant investments and make it easier to decide which investments to cut; and
- execute efficiently and predictably.

According to Bhatnagar (2004), good IT governance aligns IT objectives with business objectives, provides a way to measure performance against goals, mitigates risks, delivers value, helps to ensure that business solutions are delivered on time and within budget and assists in delivering professional IT service to the enterprise.

2.7 Value of IT in the organization

Van Grembergen, De Haes and Guldentops (2004) note that an IT governance framework identifies all the processes needed to run an IT department, measures the level of performance for each process according to desired enterprise's goals, and provides steps to improve the processes.

The basic principles of IT value are the on time and within-budget delivery of appropriate quality, which achieves the benefits that were promised. In business terms, this is often translated into:

- competitive advantage;
- elapsed time of order or service fulfilments;
- customer satisfactions;
- customer waiting time; and
- employee productivity and profitability.

Often, top management and boards fear to start major IT investments because of the size of investment and the uncertainty of the outcome. As for effective IT value delivery to be achieved, both the actual costs and the return on investment need to be managed.

According to ITGI (2006) the value that IT adds to the business is a function of the degree to which the IT organization is aligned with the business and meets the expectations of the business. The business should set expectations relative to the content of the IT deliverable:

- fit for purpose, meeting business requirements;
- flexibility to adopt future requirements;
- throughput and response times;

- ease of use, resiliency and security; and
- integrity, accuracy and currency of information.

The business should also set expectations regarding the methods of working:

- time to market;
- cost and time management;
- partnering success; and
- skill set of IT personnel.

In order to manage expectations, IT and the business should have a common language for value, which translates business and IT terminology and should be based wholly on fact.

There must a common value between business and IT exists. Without harmonizing the two, there cannot be success in business. Weill and Broadbent (1998) illustrate how different levels of management and users perceived the value of IT differently in **Figure 2.9** below.

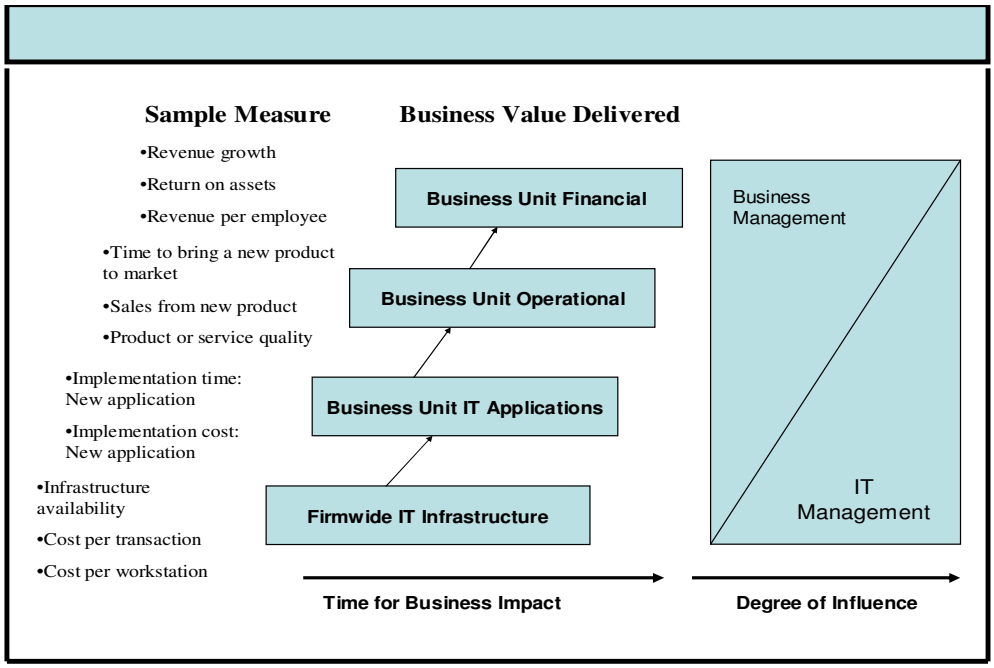

Figure 2.9, Views of IT value

ITGI (2006), *Board briefing on IT governance*.

In Figure 2.9 Weill and Broadbent show that the higher it goes in the measurement hierarchy, the more dilution occurs. It can be seen that measuring the impact of an IT investment is much easier at the bottom of the hierarchy than at the top. Therefore, successful investments in IT have a positive impact on all four levels of the business hierarchy. Although there is an increasing separation between the creation of value and its subsequent realization, it is important not only to focus on measurements based on value realization, but also to take into account the enterprise's performance in creating value.

2.8 Return on investment of IT in relation to its expenditure

Nowadays, organizations invest huge sums of money in their IT systems. However, IT department managers would be hard-pressed for an answer if they were asked to quantify the value that IT infrastructure contributes to their organization's bottom line. This is where the implementation of an IT governance framework would be useful.

According to Sethuraman (2006), IT governance is part of corporate governance and it enables managers to achieve the objectives of its stakeholders through the use of IT resources.

2.9 Challenges organizations confronted with implementing IT governance and its structures

The management of risks such as integrity risk, relevance risk, security or access risk, availability risk and infrastructure risk, is a cornerstone of IT governance, ensuring that strategic objectives of the business are not jeopardized by IT failures. Managing IT risks and exercising proper governance are the challenging experiences as business managers are faced with technical complexity, dependence on an increasing number of service providers and a limited supply of reliable risk monitoring information.

According to Mott and Leeming (2003), the five common pitfalls of implementing IT governance are overly ambitious or unclear objectives, improper ownership, a flawed overall structure, no planning, and people. Other challenges to the organizations are discussed in the next sections.

2.9.1 Organizational commitment to change

The organization needs to manage changes in obtaining commitment to its works in obtaining this commitment; an organization needs to define what it wants to change and what it should look like after it is changed. Organizations also need to understand how change can be effected within their organization, for example, is change best accomplished through a bottom-up or top-down approach?

2.9.2 Assessment of the current state of organizations

Organizations are not honestly assessing their current state; the current state refers to the readiness of the organization to embrace change. Cangemi (2006) acknowledges that the organization needs to know that successful change management starts with an honest assessment of the enterprise's current state which should be done in consideration of the following factors:

- business culture;
- extent of change;
- winners and losers; and
- bench strength.

1. Business culture

The probability of successful change in the organization is mostly likely to be affected by the organization's culture. If the enterprise's culture is stoic or rigid, then change will be more difficult.

2. Extent of change

Enterprises need to assess the extent to change they are trying to accomplish and be realistic with their goals. Organizations should know that the more significant the change, the less likely successful it will be.

3. Winners and losers

There are always winners and losers with changes. Therefore, it is important for the organization to understand the impact change will have on people. The losers are often obstacles and the winners are often change agents, so identifying the winners early and engaging them in the process will be a key success factor.

4. Bench strength

The ability of an organization to adapt to change is often proportionate to the skills and experience of that organization. Therefore, if change requires significant retraining or modification in skill set, then to be successful, training investments need to be made.

2.9.3 Overcoming the obstacle on IT governance implementation

Once organizations have assessed their current states honestly, and have identified the relevant obstacles to change, they should implement a strategy to overcome such obstacles. There are important lessons learned from organization that have already been through IT governance implementation process (Ken, 2005. The lessons include:

- **Communication:** Organizations are naturally resistant to change, and people need to understand the purpose of change and the benefits of such change. Organization should know that effective communication is more than just providing regular up dates. Therefore, the organization should:
    - understand the pain points;
    - determine the best medium of communicating; and
    - obtain feedback.
- **Training:** If organizations want to evolve, it is important to give people the skill they need to get there. The organization should

identify training requirements for each affected employee, and plans should be implemented to deliver such training.

- **Motivation:** Change is mostly successful when employees are motivated and allowed to use their own incentives. Incentives provide a productive and goal-oriented approach for making change happen, and the result is often a win-win for the organization and its people.

Quoccirca's (2006) notes that the real challenge for IT directors and their board colleagues is the moving away from past habits to a better integration of IT and business needs.

Clear and unambiguous definitions of the roles and responsibilities of the involved parties are prerequisites for an IT governance framework. The board members should keep their knowledge of current business models, management techniques, technologies and the potential risks and benefits associated with each of them up-to-date. CEO and CIO need to report to the board on a regular basis, which independent overseer the business performance and compliance.

Despite the noise around 'hot' topics such as security and off shoring, CIOs have named IT governance their top priority, highlighting the pressure they are under from the board members to measure whether IT projects really are delivering value for money.

2.10 Research Questions

After the discussions above, the following items are being identified as important for local organizations.

- Is value obtained from investment in information technology ensured or is anticipated value of the investment in IT being achieved in Namibia?
- Is the IT governance benefit known or sufficiently calculated by the management of enterprises in Namibia?
- Is there an alignment between the business and IT strategies in most organizations in Namibia?

2.11 Conclusion

IT has advanced far beyond expectations in business executions. There exists unlimited computing power at unlimited speeds with unlimited storage. The Internet provides universal connectivity and IT network assists the ERP systems in the operation of an organization. Although 'IT governance' may not be the term on everyone's lips, it should be included in the techniques a CIO needs for the organization’s success.

CHAPTER 3: Research Methodology

3.1 Introduction

The purpose of this chapter is to provide the scientific basis for the research, which has been conducted. This chapter also explains the reasons for using the various methods or techniques, giving advantages and the disadvantages of these methods or techniques.

3.2 Objectives

This chapter provides a framework for the author to ensure validity and reliability of the findings. The Brainy Dictionary (2005) defines Validity as the quality or state of being valid; strength; force; especially, power to convince; justness; soundness; as the validity of an argument or proof or the validity of an objection. Carmines and Zeller (1979) asserts that reliability is usually concerned with stability over time. Understanding these two terms is important to understanding measurement in both theoretical and applied data gathering settings. In the field of testing, researchers are more concerned with the reliability and validity of a test as a whole.

3.3 Sampling and Sampling Techniques

3.3.1. What is sampling?

Sampling is the process of selecting units from a population of interest so that by studying the sample and understanding the properties of the characteristics of the sample subjects, the properties may be generalized to the population elements (Trochim, 2002).

There are two distinct types of sampling design, probability and non-probability sampling. In probability sampling, the elements in the population have a chance of being selected as a sample subject. In non-probability sampling, the different elements do not have a known or determined chance of being selected. According to Sloan (2000) the difference between non-probability and probability sampling is that non-probability sampling does not involve random selection and probability sampling does. Probability sampling consists of systematic sampling, cluster sampling, and stratified random sampling. Non-probability sampling consists of convenience sampling, purposive sampling, judgments sampling and snowball sampling. However, Sloan (2000) notes that the particular entities that researchers select compromise their sample.

3.3.2 Sampling technique to be used

Judgmental sampling has been used to determine or select the number of interviewees during the research because the researcher can determines the sample size on a judgment basis and this is also due to the fact that the population of organization being selected is minimal. This situation requires the use on a non probabilistic sampling procedure.

3.4 Data Collection Methods

Data can be collected in a number of different ways and from different sources. The different collection methods which were used include face to face interviews and telephonic interviews. The author also utilized several survey techniques which include mail surveys, e-mail surveys, interviews, web surveys and questionnaires.

3.4.1 Survey Methods

Survey is one method of data collection which can be done quickly in order to gain insight to the population's needs and tastes. Using surveys, it is possible to collect data from large or small populations. Different types of surveys consist of several research techniques developed by a variety of disciplines. Sekaran (2000) notes that in order to select a survey instrument there are several factors to consider some of the factors are:

- reliability;
- validity;
- freedom from bias;
- cost;
- political consequences; and
- duration.

3.4.2 Questionnaires

A questionnaire is a pre-formulated written set of questions to which respondents record their answers, usually within rather closely defined alternatives (Sekaran, 2000). A sample of respondents is brought together and asked to respond to a structured sequence of questions. Questionnaires are very cost effective when compared to face-to-face interviews. Developing well-crafted questionnaires is more difficult than it might seem. Researchers should carefully consider the type, content, wording and order of the questions that they include.

3.4.2.1 Advantages of Questionnaires

The data collected from the questionnaires are easy to analyze. Data entry and tabulation for nearly all surveys can be easily done with many computer software packages. Another important advantage is that questionnaires reduce bias (Sekaran, 2000). In a questionnaire there is uniform question presentation and no middleman bias. The researcher's own opinions do not influence the respondent to answer questions in a certain manner. There are no verbal or virtual clues to influence the respondent (Leedy and Ormrod, 2005). Questionnaires are also less intrusive as compared to telephone or personal interviews. The respondent is allowed to complete the questionnaire at his own free time. Unlike other research methods, the research instrument does not interrupt the respondent. Questionnaires also help the researcher to know precisely what information is needed (Leedy and Ormrod, 2005).

3.4.2.2 Disadvantages of Questionnaires

A major disadvantage of written questionnaires is the possibility of low response rates (Leedy and Ormrod, 2005). Low response is the curse of statistical analysis. It can dramatically lower the researcher's confidence in the results. They also allow little flexibility to the respondent with respect to response format. However, by allowing space for comments the researcher would be able to gain important information that would have been otherwise lost, thus overcoming this disadvantage (Leedy and Ormrod, 2005).

3.5 Data collection tool used

The tool, which was used, was the questionnaire. One of the reasons for choosing the questionnaire is that it allowed for easy data collection and data could be collected in an orderly and timely fashion. It also reached a large number of respondents in a short time frame at the disposal of

the researcher to undertake the study. Once the data was collected, the information was coded easily. The implications of this mean that the researcher compiled the results quickly and also formed quick conclusions from the results. Furthermore, the questionnaire provided the relevant information. The questions asked were closed ended with a few open ended questions to give the respondent the ability to expand on previous answers.

Although personal interviews may give more insight into the respondent's answers, interviews supported the questionnaire and provided the desired responses.

3.6 Construction of the Questionnaire

When constructing the questionnaire there are various factors which need to be taken into consideration. Leedy and Ormrod (2005) state that following guidelines for developing a questionnaire encourages participants to be co-operative and yields responses that the researcher can use and interpret. Some of the guidelines for the construction of a questionnaire are:

- keep it short;
- use simple, clear, unambiguous language;
- check for unwarranted assumptions implicit in the questions;
- word questions in ways that do not give clues about desirable results;
- provide clear instructions;
- give a rationale for any items whose purpose may be unclear; and
- scrutinize the almost-final product carefully to make sure it addresses the needs of the research.

3.6.1 Types of Questions

Generally there are two types of questions. Those are open ended questions and closed questions. Closed questions ask the respondents to make choices amongst a set number of alternatives. Open ended questions allow respondents to answer questions in a way in which they wish. Both open and closed ended questions were used in this research. Since the questionnaire was the main instrument in this research, closed questions were used more than open ended questions.

3.6.2 Sequence of questions

The sequence of questions should be structured in way that they flow from the general to the specific. This is the approach that was taken by the researcher in the construction of the questionnaire. This approach facilitated the smooth flow of the respondent's progress through the questionnaire.

3.6.3 Forms of the questions

The wording of questions can either be positive or negative. Leedy and Ormrod (2005) state that the questionnaire should not include the following types of questions:

- double barrelled questions;
- ambiguous questions;
- recall dependant questions;
- leading questions; and
- loaded questions.

3.7 Administration of the tool

The questionnaire was administered to the IT and Finance personnel at selected organizations in Namibia randomly. The reasons for choosing these respondents are that many of them should be involved in the IT governance process in the organizations.

3.8 Layout of the Questionnaire

The researcher used two different questionnaires consisting of 28 questions for IT people and 25 questions for Finance personnel. A total of 46 questionnaires were collected from both IT and finance departments of which 21 questionnaires came from financial department and 25 from IT department and will be discussed in Chapter Four in comparison with information provided in Chapter Two early.

3.9 Data Handling

The questionnaire provided the most efficient means to get the responses necessary. Therefore the author used SPSS to analyze the data collected from the questionnaire. The results are represented in tables and graphs in Chapter Four.

3.10 Conclusion

For the purpose of this study, the questionnaire was designed with help of both Professor Dr Dave Cook from the School of Information Technology at Polytechnic of Namibia and Dr. Wolfgang Johannsen from HFB – Business school for Finance and Management in Germany. The next chapter presents analyses of the data collected using the questionnaire. In addition, the relevance of the findings are discussed and used to determine whether IT governance implementation framework can assist an organization in achieving its goals and objectives.

CHAPTER 4: Results and Interpretation

4.1 Introduction

This chapter deals with the analysis of data and presentation of the results. The data were collected using a mail surveys, e-mail surveys, face to face interviews, web surveys and questionnaires.

The data were collected from IT and financial specialist within selected organizations in Namibia to determine the status and implementation of IT governance in their organizations. To ensure that all participants had a similar definition of "IT governance" and common understanding of the technology and IT skills available to the business/organizations, participants were asked to envisage IT governance in their enterprises.

The questionnaire consisted of 40 questions of which 9 were open ended questions. This enabled the respondents to expand on previous answers, thus the research could gain more insight into the answers given by the respondents. Questionnaires were sent out to five (5) banking institutions, six (6) state owned organizations, ten (10) private organizations and four (4) IT organizations. A total of questionnaires were distributed as follows: 45 questionnaires for IT specialists and the 45 for financial specialists. 46 completed questionnaires were received, 21 from financial and 25 from IT specialists. Data collected from respondents were analyzed by grouping together similar specialists and comparing them with other groups of specialists. Comparisons were also made between financial and IT specialist from the same enterprise to determine whether they had the same understanding or they are speaking the same language.

The results show that:

- aims and objectives of IT in the business are not well defined;
- IT is not a regular item in the board's meeting agenda;

- the boards have less decision authority concerning IT systems;
- communication among stakeholders and involvement of the boards and its executives on IT system is minimal;
- degree of IT and business alignment in the enterprise is very loose;
- the structure of IT systems in the organizations is not taken seriously;
- IT projects are not delivering as they are expected and they are always over budget;
- IT development skills are outsourced; and
- the impact of IT on business improvement is not good.

4.2 Data Analysis

4.2.1 Corporate governance vs. IT governance

Respondents were asked to define corporate and IT governance to ascertain whether they understand what it is all about. The following definitions were given:

- IT governance as a set of rules, procedures and agreements set up by management and its board to govern the decision making regarding information technology maintenance and its supply within the organization,
- Corporate governance is defined as a set of policies, systems and procedures drawn up by management and the board to run the organization.

Although respondents have defined those two parts a bit differently in terms of sentences, the message is similar, as both have mentioned that they have the same set of rules or policies and framework drawn up by the management and its board to run the organization and its parts. Corporate governance is broader as it used to answer and to translate how governance in various parts of the organization is done, of which

IT is one of those parts. But both respondents have indicated that the relationship between the two is inseparable as both are interdependent and assist the organization to reach its objectives.

4.2.2 Business and Information Technology alignments in the enterprise

4.2.2.1 Objective of IT in the business environment

IT is a major driver of business wealth. It provides opportunities to obtain a competitive advantage and offers a means for increasing productivity. IT transforms the organizations and creates value added products and services to the business states.

4.2.2.1.1 Objectives and business aims of IT in Organizations

Financial specialists indicate that IT aims and its objectives in the business are not well defined. This is due to the lack of involvement by IT in the initial business planning process.

4.2.2.1.2 Organization of IT function procedures in an enterprise

The majority (83%) of the respondents indicated that business aims of IT are not well defined in the organization and 17% stated that it is well defined. At the same time 67% of the respondents acknowledged that IT functions are well articulated in the organization while 33% contradicted this.

Looking at the figure of the respondents regarding the aim of the business in comparison with the figure concerning the function of IT in the organizations shows that IT governance implementation is a need in all organizations throughout the country. In order to assist the organizations in defining their IT functions in line with business aims

and to maintain and implement the overall enterprise strategy. The table below indicated the achievement of IT in the organizations.

	Achieved every time	Achieved sometimes	Not Achieved	Total
IT Profession	50%	33%	17%	100%
Finance profession	40%	20%	40%	100%
Average	45%	26.5%	28.5%	100%

Table 4.1 Achievement of IT objective in the organizations

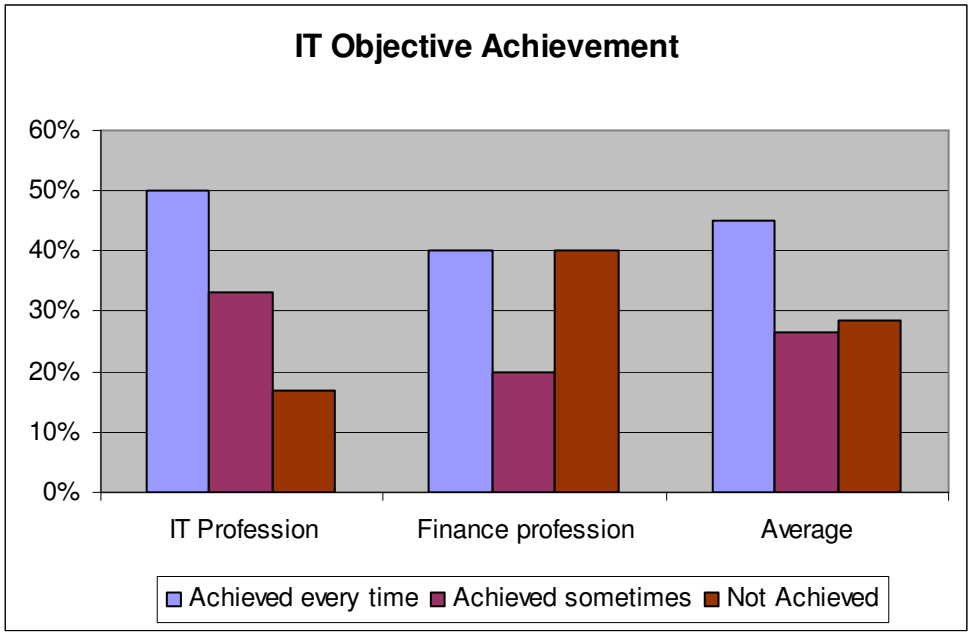

Figure 4.1, IT Objective Achievements

In table 4.1, 40% of financial specialists indicated that IT objectives are not achieved as expected compared to 50% responses from IT specialists which shows achievement of IT objectives every time. This shows that communication between stakeholders on IT is not that good. This can be attributed to the overall results in the respective table 4.1

between the two professions where 10% and more of the respondents from the same organizations have a different view on the achievement of IT objectives, while they were supposed to give more or less similar results, if communication were in place. That can only be achieved with the implementation and execution of IT governance.

4.2.2.2 Adoption of right Information Technology

	Well adopted	Moderate adopted	Loosely adopted	Total
IT Profession	33%	67%	0%	100%
Finance profession	0%	80%	20%	100%
Average	16.5%	73.5%	10%	100%

Table 4.2 Adoption Of right IT solutions

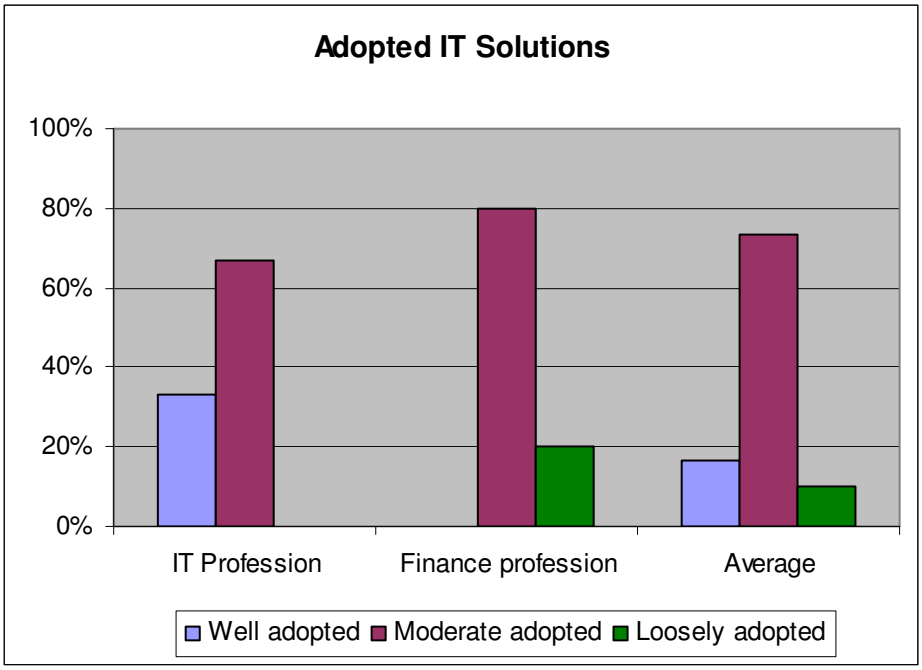

Figure 4.2, Adopted IT Solutions

Respondents in table 4.2 were asked whether the organizations have adopted the right IT solutions. The majority indicated moderate adoption of IT solutions. Moreover, if right IT solution is not adopted ultimately, IT objective will not be achieved as indicated in the previous table 4.2 above. Likewise, if business and IT objectives are aligned, right IT solution will be easily adopted. Respondents were not well aware that IT in the enterprise is a strategic asset to continue business growth and innovations.

	Always	Not always
Finance profession	20%	80%
IT Profession	17%	83%

Table 4.3 IT is a regular item on the agenda of the Board meeting and is addressed in a structured manner

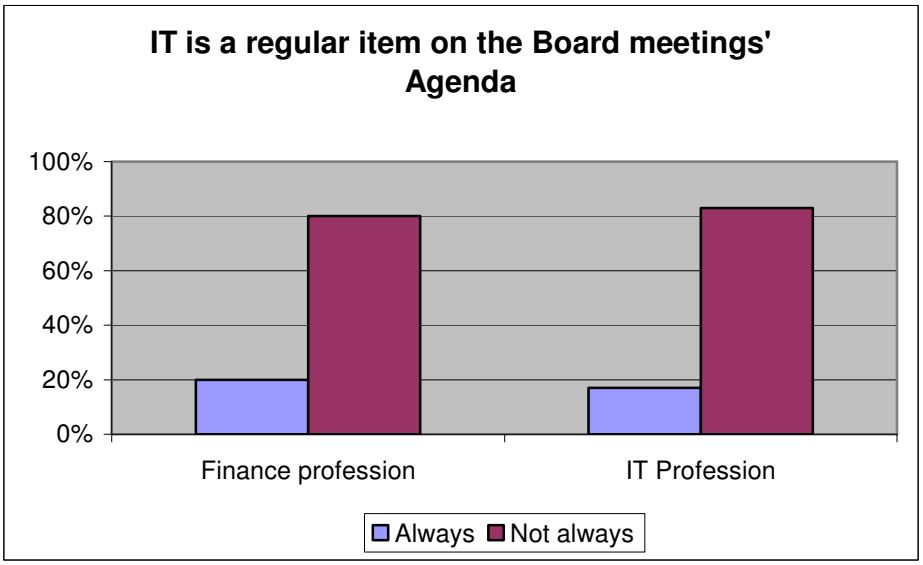

Figure 4.3, IT is a regular item on the Board meetings' Agenda

The respondents were asked whether IT is a regular item on the agenda of the Board meeting and whether it is addressed in a structured manner. As depicted by Table 4.3, eighty percent (80%) of financial professions and eight three percent (83%) of IT professions indicated

that IT is not always included in the board meeting's agenda in their organizations. 20% and 17% of respondents of both professions stated that IT is always a regular item in the agenda. With IT governance that need to be discussed and decided by the board, this shows that organizations do not implement IT governance using the right procedure. It is also important for the boards and executives to be informed and to understand how strongly the enterprise relies on IT and how critical IT is for executing the business strategy which is not well done according to the results presented.

4.2.2.3 IT decision making authority in the organization

4.2.2.3.1 Allocation of IT decision making authority in the organization

Seventy one percent (71%) of the respondents show that board of directors have less authority when it comes to decision making with regards to IT systems used by the organizations in Namibia, where most of the decision is left with top management (executives). The definition of IT governance implies that the board of directors and its executives have responsibilities of providing strategic direction, and ensuring that objectives are achieved. They should also ascertain that risks are managed properly. The enterprise should know that it is always important to involve the board with regards to IT decision making authorities at all times for better strategic direction and objective achievement.

4.2.2.4 IT standard architecture in the organization

4.2.2.4.1 IT resource and infrastructure

The majority (67%) of respondents indicated that organizations have insufficient IT resources and infrastructure systems in place. This is probably due to the fact that many of the enterprises do not have well defined IT business aims and their board of directors are not fully informed or involved in IT decision making and do not know what IT can do to the realization of their business objectives. This also indicates how IT continued being treated as an entity separated from the business. There is a high degree of risk as IT infrastructure is not readily available. IT acquisition and development are principally driven

by IT personnel rather than the stakeholders who are dependent on IT systems, which makes the business objective unrealizable in some of the organizations in Namibia.

	Yes	No	Total
IT Profession	100%	0%	100%
Finance profession	60%	40%	100%
Average	80%	20%	100%

Table 4.4 IT projects progress reports to the board of directors

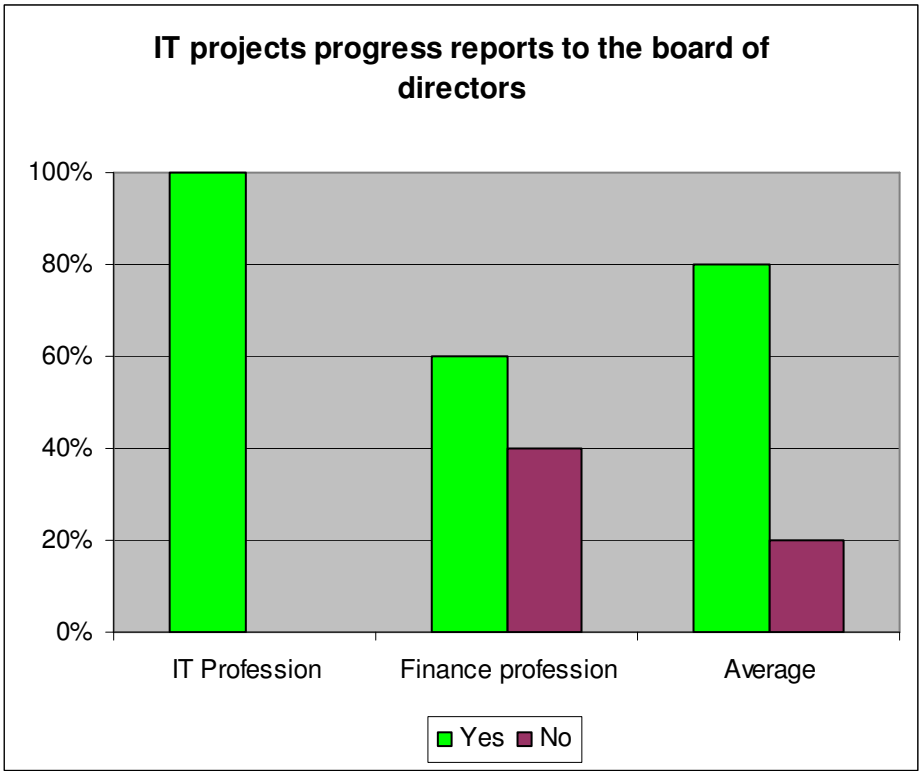

Figure 4.4, IT projects progress reports to the board of directors

In table 4.4, IT profession responses indicated that board of directors are always receiving IT projects progress reports, while only 60% of the financial profession said progress reports go to the board of directors and the other 40% stated that the board of directors receives nothing at

all with regards to IT project undertaken in their respective organizations. The discrepancy of 40% between the two groups of professionals gives a clear testimony that the communication among stakeholders and involvement of board and its executives is minimal or less than average.

	Expressed	Sometimes expressed
Finance profession	40%	60%
IT Profession	17%	83%

Table 4.5 Board's articulation and communication on Business objectives of IT alignment

Business objectives on IT alignment are not well expressed as shown in table 4.5 above. The culture of openness and collaboration among the functional, business and geographical units in enterprises is not ensured. The enterprises direction on IT strategy to address the level and allocation of investments, as well as balancing of investments between supporting and growing, and making careful decision about where to focus IT resources, is not addressed.

4.2.2.5 Degree of alignment in the organization

Alignment of business and IT involve making the services provided by the enterprise's IT function reflect the requirements and desires of the business users.

	Strongly	Somewhat	Loosely	Total
IT Profession	17%	66%	17%	100%
Finance profession	40%	20%	40%	100%
Average	28.5%	43%	28.5%	100%

Table 4.6 Business strategies and IT strategies alignments in the enterprise

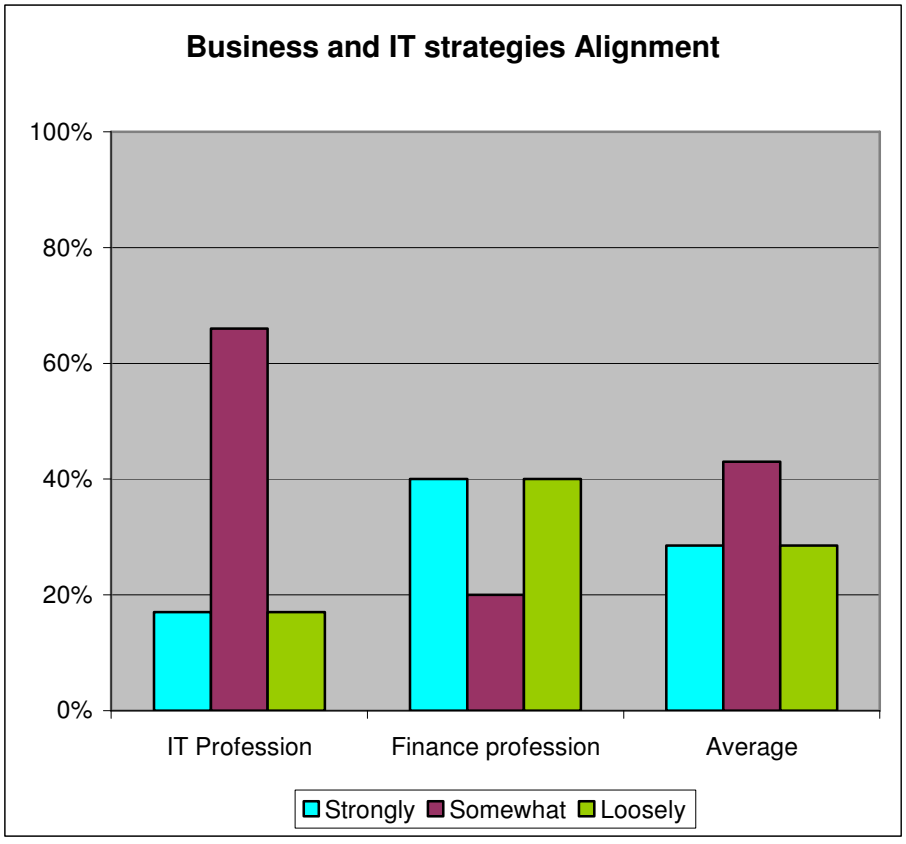

Figure 4.5, Business and IT strategies Alignment

According to the respondents in table 4.6 and figure 4.5, 43% in average shows that business and IT strategies are not aligned, 28.5% shows a strong alignment and 28.5% shows loosely alignment strategies. These results give a clear picture as to how IT governance implementation process has been followed.

4.2.3 Achievement and realisation of IT in the organization

4.2.3.1 Structure of IT in the enterprise

The structure framework provides an excellent form that can be used or followed by the enterprise to meet its needs effectively.

	Meet enterprise's need	Meet enterprise's need partially	Total
IT Profession	33%	67%	100%
Finance profession	40%	60%	100%
Average	36.5%	63.5%	100%

Table 4.7 Organization of IT in the enterprise

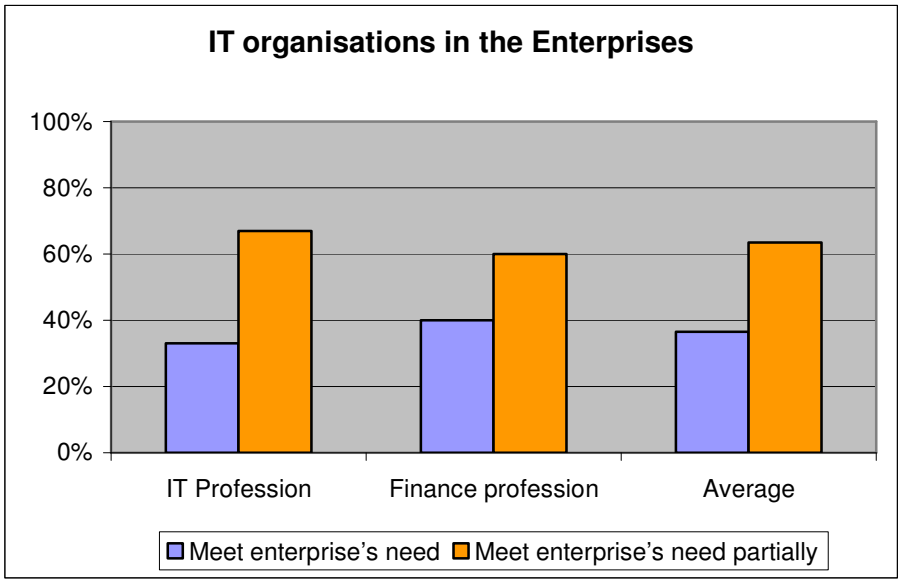

Figure 4.6, IT organizations in the Enterprises

67% of IT specialists and 60% of financial specialist stated that IT structures are only meeting the enterprise's need partially as per table 4.7. The table shows that IT structures are not taken very seriously.

4.2.3.1.1 IT organization/structure in the organizations with regards to local and global needs

Although 67% of the respondents indicated that the structure of IT meets their local and global needs, it is not known whether such structures and processes work out well. Organizations should know that it is possible to have all the structures and procedures well in place, but it does not work out because IT and business strategies do not recognize each other and are not functioning together.

Criteria	Very Important	Important	Not important
User satisfaction	50%	50%	0%
Return on investment	50%	50%	0%
Customer satisfactions	50%	50%	0%

Table 4.8 executive criteria for IT capabilities

It was interesting to find that respondents rated IT capabilities on equal basis, where fifty percent (50%) stated that it is very important while the other fifty percent (50%) opted for "important" but "not very important" in their day to day running of their business activities.

4.2.3.2 IT investment value addition in the organization

Organizations invest huge amount of money in IT to assist the business in achieving its goals and objectives. The basic principles of IT value are the on time and within-budget delivery of appropriate quality which assists the enterprise to achieve competitive advantages, customer satisfactions, employees' productivity and profitability.

It was concluded from data analysed that increased investment in IT can transform the manner in which organizations interact with their employees, business partners and customers.

4.2.3.2.1 IT contribution to the business achievement

The researcher asked how much value IT contributes to the organization's operations to ascertain whether IT has been regarded and considered as part of business achievement. At the same time respondents were asked how IT in the organization is structured. The respondents indicated that they had a very good IT structure in place which meets their needs.

Since the structure of IT is very good according to the respondents, IT contribution to the business achievement should be of a high quality. But 40% of the respondents show a very low and least high contribution of IT to the success of the business. This might be due to the little business awareness on the part of IT or little IT appreciations from the business. So to have effective IT governance, there must be collaboration between IT and business strategies.

4.2.3.2.2 Return on IT investment

The respondents were asked how well the organization controls IT return on investment and whether the board has a clear view of the major IT investment from a risk and return perspective. Forty percent (40%) of the respondents indicated that return on investment of IT is low, meaning that IT realisation is not giving enough impacts to the enterprise's growth. However, business, technology and industry regulations continue to change and present new opportunities and challenges. To survive, the enterprise needs to undertake continual

check to obtain value and minimise risk from their IT investment which is very low. According to ITGI (2006), IT adds value to the business when the IT organization is aligned with the business and meets the expectations of the business.

	Always have a clear view	Sometimes have a clear view	Do not have a clear view
IT Profession	33%	67%	0%
Finance profession	40%	20%	40%
Average	36.5%	43.5%	20%

Table 4.9 Board's view on the major IT investment' projects in the organizations

Even though there is a discrepancy among two specialist respondents in table 4.9, there is, however, a healthy indication of the board's involvement in IT investment with clear views of what IT is supposed to deliver.

4.2.3.3 Information Technology Security in the organization

The purpose of IT security is to present a system of security principles considered in the design, development and operation of an IT system. Without adequate security measures being considered all the time for all phases of the IT systems, the enterprise will not achieve competitive advantages.

IT securities ensure that security risks are cost effectively managed. The use of IT within the enterprise and outside the enterprise complies with laws and regulations.

	Yes	No
IT Profession	67%	33%
Finance profession	80%	20%
Average	73.5%	26.5%

Table 4.10 IT Security in the enterprise

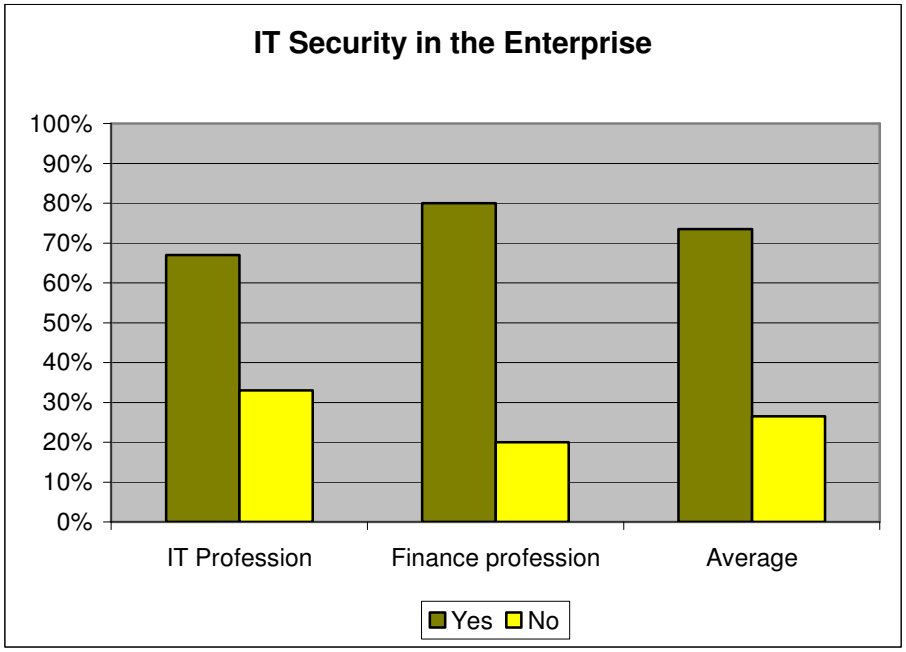

Figure 4.7, IT Security in the Enterprises

Most respondents in table 4.10 indicated that IT securities are in place but customers are not being informed as to how their data is protected from unauthorized access and how business continuity is maintained in their organizations. Therefore, there is a need for the organization to keep customers assured and informed of the business stability and operations.

4.2.3.3.1 Management of IT in the organization

Information gathered indicates that half (50%) of the respondents stated that management of IT is partially managed due to the less involvement of top management in ensuring that prudent checks and balances are put in place to enable them to monitor both the progress of the IT projects and the alignments as well as the impact of the IT systems on their business. The other half (50%) of the respondents showed that there was a well managed IT in their organizations. In the latter case there is full involvement of senior management in the responsibilities in all aspects of the IT systems from the start.

4.2.3.4 Operational budget of IT in the organization

The results of the analysis indicated that organizations are not developing their IT budget in accordance with the business objectives. Their budgets show that they allocate more money to staffing issues than to IT systems. IT budgets do not cater for the development of IT systems in organizations in Namibia.

The information gathered during research indicates that it is very rare for the IT project to be completed within the original budget. This means that the IT project is not completed in time as supplementary budget have to be provided. IT experts have a professional duty to be honest in their representations about the capabilities of new IT systems. IT professionals do not have a strong sense of professional responsibility and integrity. Professional guidelines are not well adopted, to address issues of honesty, adherence to planned agreements, handling of human subjects, impartiality in data analysis and professional consulting, professional accountability, and resolution of conflicts of interest. IT provides numerous opportunities for acting

unethically. It is important therefore, to make IT professionals aware of the need to act ethically as well as the consequences of not acting ethically.

4.2.3.5 Delivery of IT projects in the organization

Financial specialist	Succeed and on time	Succeed but not on time	Fail
Very Often	0%	0%	0%
Often	29%	29%	42%
Sometimes	33.3%%	33.3%	33.3%
Not at all	100%	0%	0%
Average	40.5%	15.5%	18.8%

Table 4.11 Delivery of IT projects in the organization

According to the respondents in table 4.11 IT projects have never succeeded and been on planned time. This made the board expectations and the reality of the status of IT not to match as board's expected IT solutions to deliver appropriate quality on time and within the stipulated budget. They also want IT systems that ensure adequate return on investment. IT systems should also increase efficiency and productivity. However, if effective IT governance is not in place, many negative outcomes and experiences occur.

IT specialist	Succeed and on time	Succeed but not on time	Fail
Very Often	50%	50%	0%
Often	50%	0%	50%
Sometimes	30%	60%	30%
Not at all	0%	0%	100%
Average	32.5%	27.5%	45%

Table 4.12 Delivery of IT projects in the enterprise

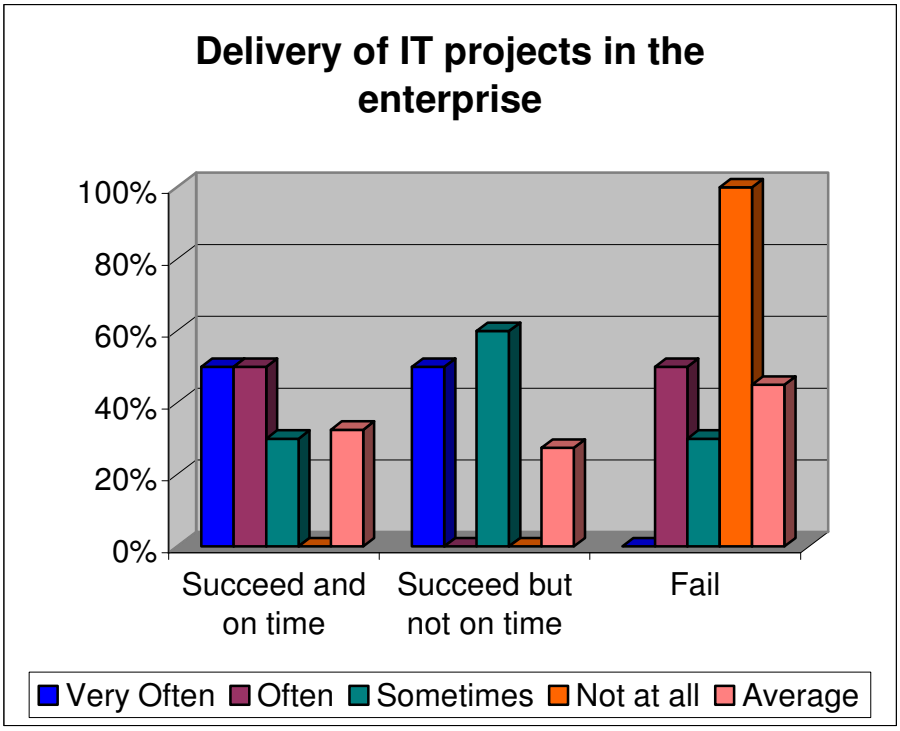

Figure 4.8, Delivery of IT projects in the enterprise

In order for IT to successfully deliver good services to support the enterprise's strategy, clear structure of ownership and direction of the business requirement as well as a clear understanding of what IT needs to deliver and how it will be done should be known by both executive and boards. The research shows that this is not the case.

IT specialist	Very often	Often	Sometimes	Rarely
Quality	0%	60%	40%	0%
Time	20%	20%	40%	20%
Budget	40%%	0%	0%	60%

Table 4.13 Delivery of IT projects in the organization

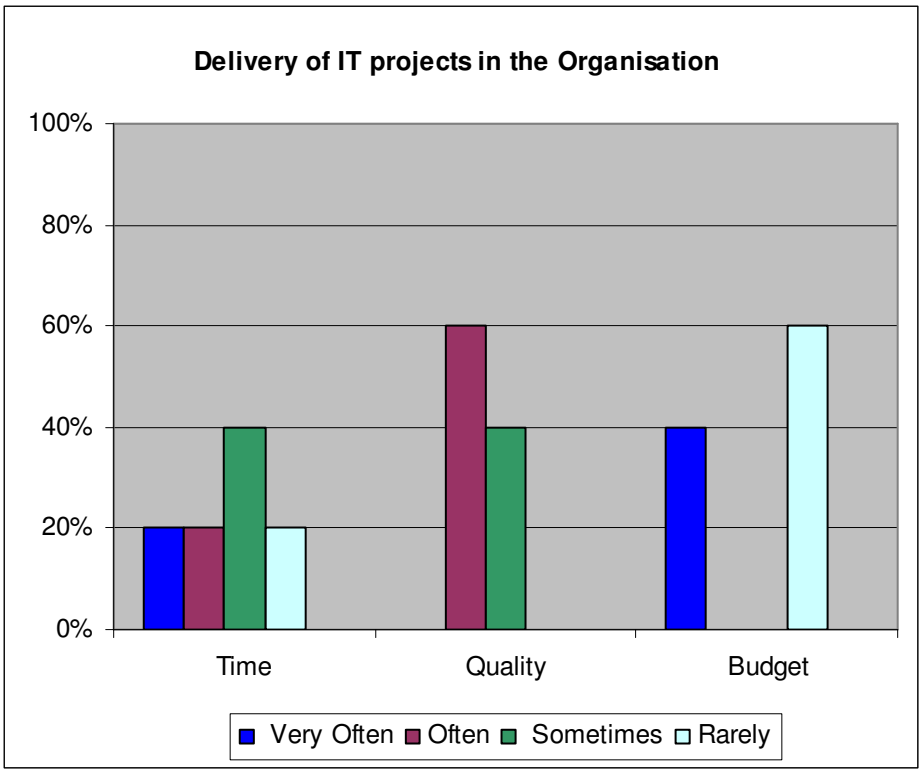

Figure 4.9, Delivery of IT projects in the Organisation

Financial specialist	Very often	Often	Sometimes	Rarely
Quality	17%	5%	33%	0%
Time	33%	33%	17%	17%
Budget	67%	0%	0%	33%

Table 4.14 IT project delivery in the Organizations

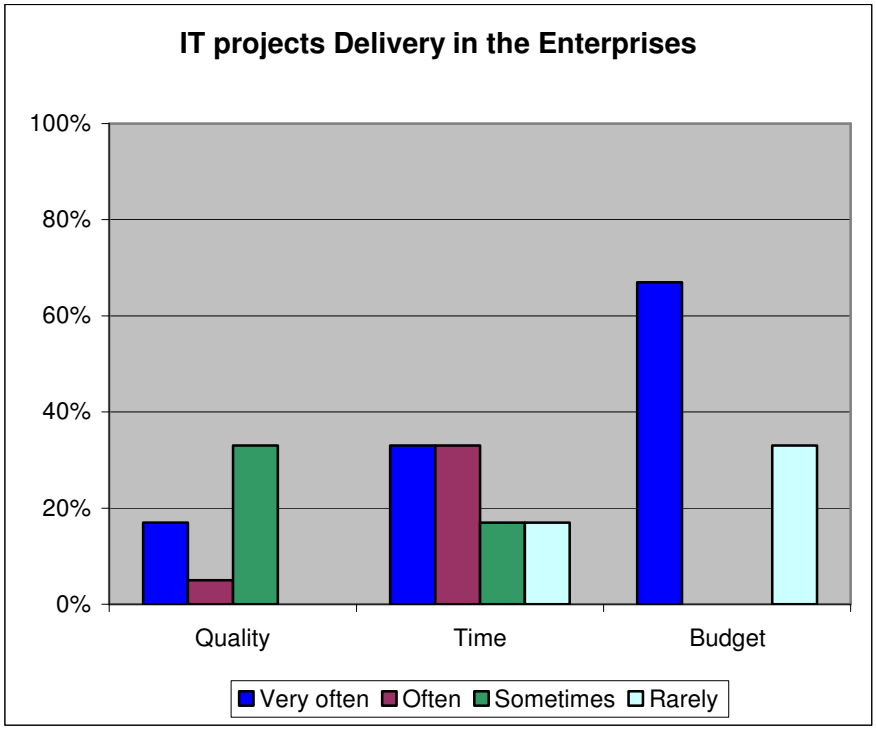

Figure 4.10, IT projects Delivery in the Enterprises

The results presented in table 4.13 and 4.14 show that the enterprises are unable to meet deadlines, costs are higher than expected, and quality is lower than anticipated. In this way efficiency and core processes of the organizations are negatively impacted.

	Failure of IT projects to deliver	IT projects succeed but not on time to deliver	IT projects succeed and on time to deliver
IT Profession	45%	27.5%	32.5%
Finance profession	18.8%	15.5%	40.5%
Total	63.8%	43%	73%

Table 4.15 Summary of IT project delivery as intended in the organization

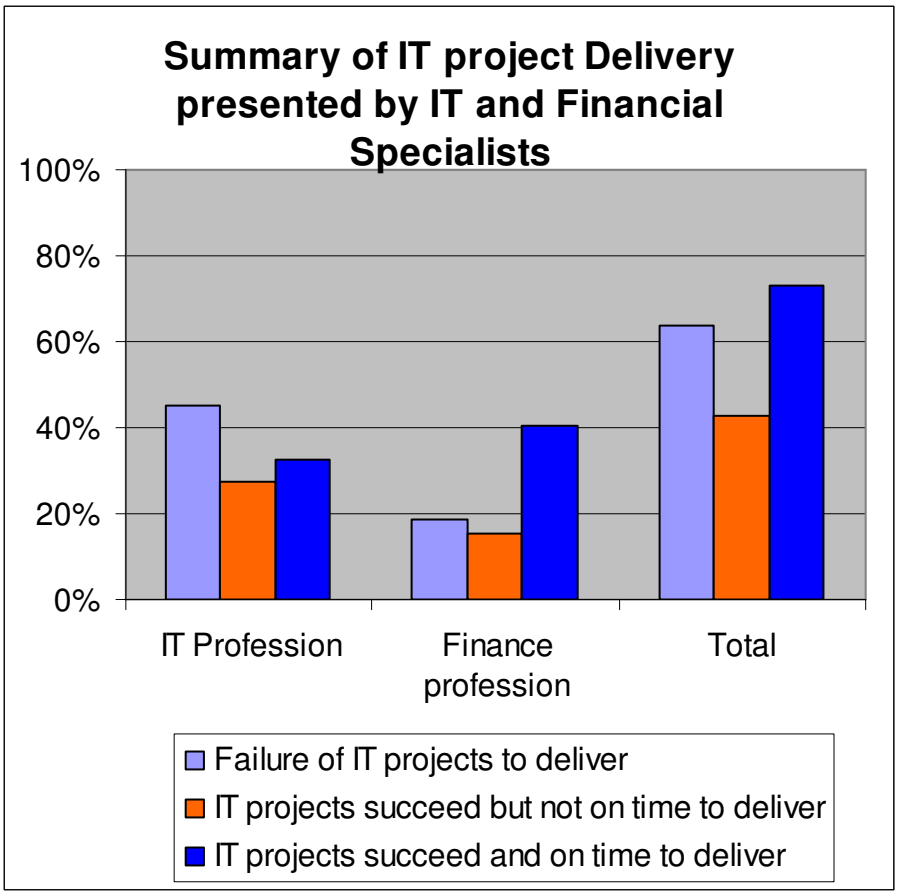

Figure 4.11, Summary of IT project Delivery presented by IT and Financial Specialists

The results in table 4.15 show that 73% in total of the respondents in the two professions indicated that IT project executed in their organizations have succeeded and finalised on time. 63.8% in total of the respondents in the two professions indicated that failure of IT projects is not ruled out. Although there is an improvement on the success of IT projects as indicated by respondents, there is still a need to reduce the failure to an acceptable and controllable level.

4.2.3.5.1 IT development skills in the organizations

Research shows that 67% of the respondents have outsourced their IT skills development and 33% indicated that IT skills are developed in-

house. However, world wide IT outsourcing is no longer seen as the most effective measure to resolve IT problems. As business and IT have become increasingly aware of the fact that IT problems cannot be outsourced, they have tended to bring control of problematic systems back in-house by making use and implementing IT governance framework (ITGI, 2006).

4.2.4 IT governance implementation benefit to the organization

4.2.4.1 Purpose of IT governance in the enterprise

The purpose of IT governance is to effectively align the IT structures and objectives with business transactions and objectives that will results in efficiency advantages. IT governance purpose refers to the system by which IT systems are directed and controlled in the organizations.

The majority (65%) of the respondents regarded bad IT governance as a big problem, which hampers the full industrial development and growth.

	Well expressed	Partially expressed
IT Profession	17%	83%
Finance profession	40%	60%
Average	28.5%	71.5%

Table 4.16 Purpose of IT governance in the enterprise

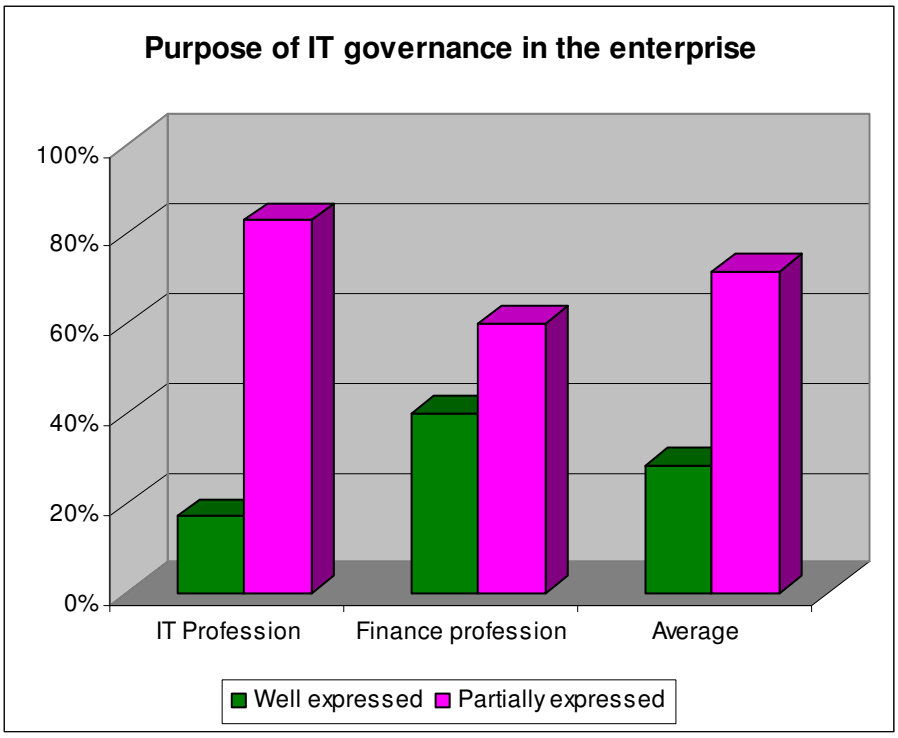

Figure 4.12, Purpose of IT governance in the enterprise

Only 17% of the IT specialist indicated that the purpose of IT governance in their enterprise is well expressed, while 83% of the respondents indicated that their organizations do talk about IT governance sometimes. The results confirm that it is still difficult for the enterprise to give the IT units the same recognition as other departments, since IT is still being taken as a supporting function rather than a crucial part of the business operation.

4.2.4.2 Management of IT in the enterprise

Management of IT is concerned with risk and resource management which addresses the safeguarding of IT assets, disaster recovery and business continuity of operation, and optimising knowledge and IT infrastructure. The results show that organizations face many diverse challenges in managing IT costs, IT securities, IT system performance and customer satisfaction within organizations in Namibia.

4.2.4.2.1 Challenges of IT management in the enterprise

Challenges of IT management lie between very high and medium, and are based on communication and mutual understanding that might be lacking between IT and business management that ensure IT resources are prioritised according to business needs and IT based business solutions that enable their users to create real value for the business. Another challenge is the minimum IT skills in leadership as management of IT requires business leadership to take more direct responsibility and accountability for IT training and other IT related issues. Without clear communication and mutual respect, contributions to the management of IT and business strategies, full alignment will be difficult to achieve and business value will not be delivered.

	Every often	Sometimes
IT specialist	33%	67%
Financial Specialist	80%	20%

Table 4.17 Risks of IT management in the enterprise

Eighty percent (80%) of the respondents from the financial profession believed that there are risks in not managing IT in respect of the overall business goals. 33% of the respondents from IT specialists had the same sentiment. The rest of the respondents from both professions believed that there is room for improvement in managing IT risks in their enterprise. The conclusion that one can make from this is that risks remain part of the challenges that business face.

	In place and executed	In place and partially executed	Not in place	N/A
(a) IT-Governance Process	17%	50%	33%	0%
(b) IT-Governance Training	17%	0%	66%	17%

Table 4.18 Process of IT governance and Training on IT governance

Respondents in table 4.18 indicated that fifty percent (50%) of the organizations do have IT governance process in place except that it is not fully executed. 66% of the respondents showed that IT governance training is not in place in their organizations. This shows that IT governance will not be able to deliver and assist the enterprise in achieving its objective, as IT governance process and training are not executed and followed properly.

4.2.4.3 Quality of IT services in the enterprise

Quality is the remarkable degree of satisfaction and perfection, and improvement is a change in the degree of quality. IT quality concepts need to be explained in details. Nearly all respondents indicated that IT in their organizations tries to avoid this explanation, escaping into specific, individual product or service related definitions.

	Very good	Good	Poor
IT Profession	33%	50%	17%
Finance profession	0%	40%	60%
Average	16.5%	45%	38.5%

Table 4.19 Quality of IT services

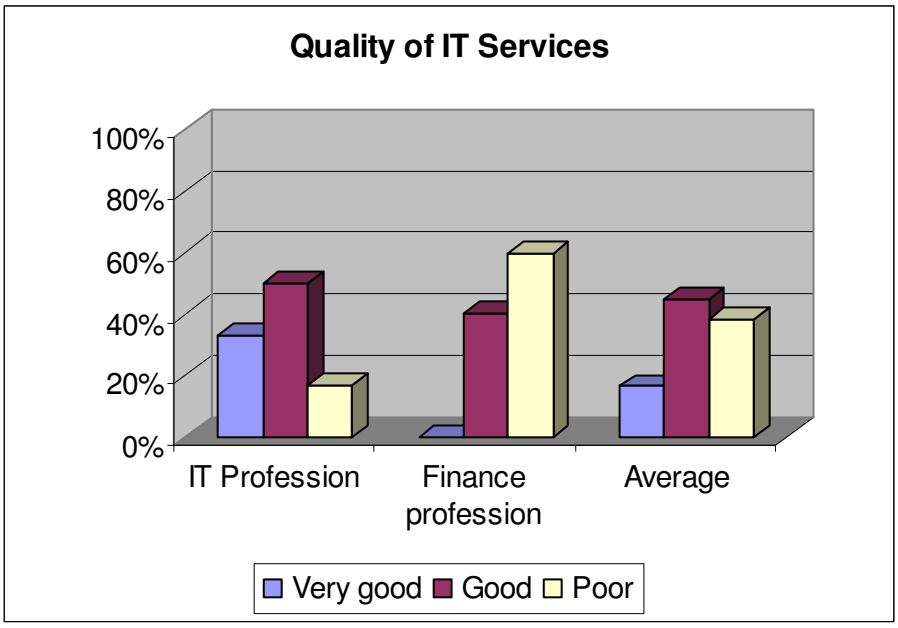

Figure 4.13, Quality of IT Services

Quality of IT service is seen to be poor by 60% of the respondents from the financial profession compared to 17% of the IT profession, but both respondents in table 4.19 indicated an improvement on quality of IT from poor to good even though there is a difference of 10% between the two groups.

4.2.4.4 Impact of IT on business improvement in the organization

The impact of IT is to improve products and services, transform business processes, enrich organizational intelligence and dynamic organizational structure in the organizations. A great deal of controversy on the impact of IT on the performance of enterprises exists. Some respondents indicated positive impacts, while others indicated negative or no impact at all.

	Good	Average	Poor
IT Profession	17%	50%	33%
Finance profession	40%	20%	40%
Average	28.5%	35%	36.5%

Table 4.20 Impact of IT on business improvement

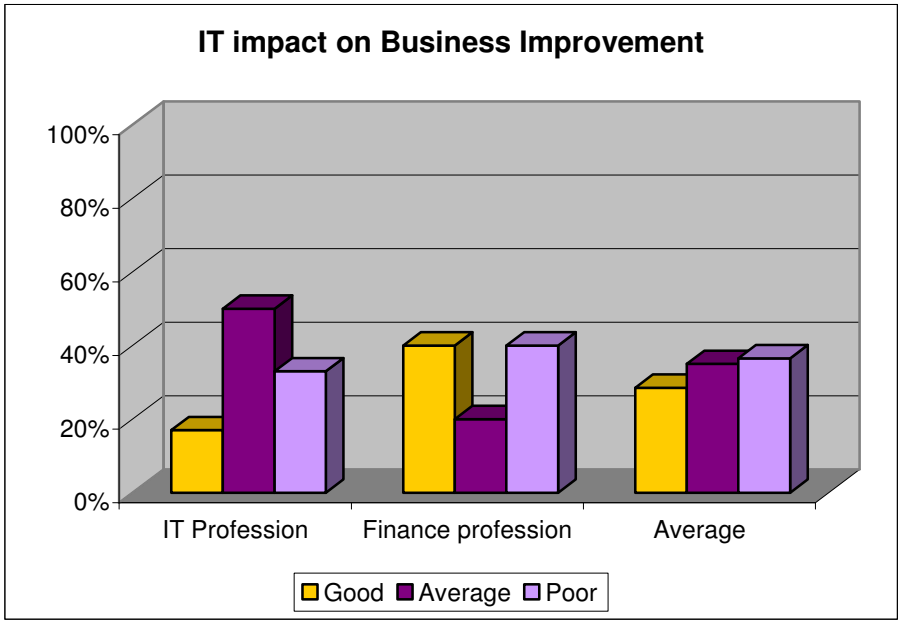

Figure 4.14, IT impact on Business Improvement

Thirty five percent (35%) in average of respondents stated that the impact of IT on business improvement is neither good nor poor while 36.5% in average of the respondent indicated that IT contribution towards business improvement is poor. This might be due to the imbalances of benefits the organizations need to receive from the IT system. Organizations have rated benefit of IT differently with a big margin as indicate in the table 4.21 below:

Criteria	Very Important	important	Not important
User satisfaction	83%	17%	0%
Saving in operating cost	83%	17%	0%
Innovative advantage	67%	33%	0%
Increase in profits	17%	50%	33%

Table 4.21 IT based benefits

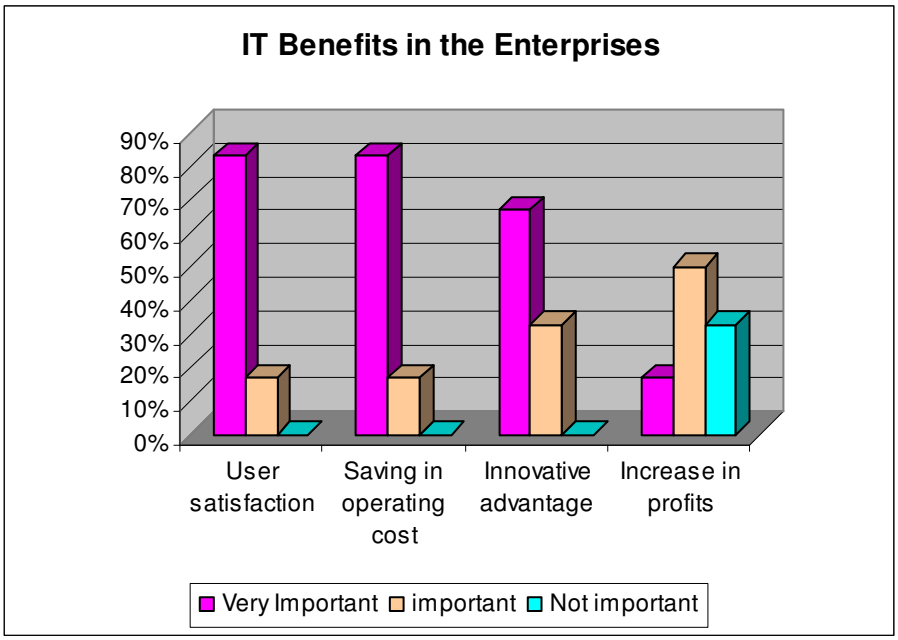

Figure 4.15, IT Benefits in the Enterprises

User satisfaction, cost saving and innovative advantages are the most important benefits for the enterprises as far as the use of IT systems are concerned. Profit was least considered as a benefit to the enterprises. The researcher recommends that a balance of these criteria is necessary for the success of the enterprise.

4.2.4.5 Business value creation

On the question of the use of IT governance to create business value, (75%) of the respondents did not consider it necessary to get relevant information to the right process or system at the right time to allow the right action to be taken were made. Business value creation was also not well realised as sometimes IT projects failed to meet business objectives through lack of commitment and accountability among stakeholders in the organizations.

Hitt and Brynjolffson (1994) state that IT is associated with increased output, but not with business value as measured by return on asset and equity.

Business values are the reward of good IT governance implementation. The higher the acceptance of IT governance by the organizations, the higher the enterprise's expectations of value creations will be.

4.2.4.6 IT development skills in the organization

The research set out to find out whether IT skills are being developed and kept internally and also whether IT activities are outsourced by organizations

The respondents stated that it is outsourced due to the lack of IT skills in their staff complements. IT systems are usually so large that they cannot be implemented by just one person; they need to be undertaken by a team of people working together. No one person could do all the work on their own, even if they had time because a wide range of skills and knowledge will be required. Therefore, IT team should be selected with care to complement each other so that everyone possesses the drive, skills and knowledge necessary for implementations which most organizations in Namibia are not able to maintain.

4.3 Conclusion

The vital element in IT governance is the alignment of IT and business strategies to lead to the achievement of business value and objectives.

The absence of an effective IT governance implementation structure significantly increases financial and operational risks. The research reveals that IT promises are rarely fulfilled due to resources constraints.

Respondents felt that in today's world economy, IT outsourcing is an essential business strategy. IT outsourcing assist the enterprise in saving money by leveraging the economies of the scale realised. It also helps relieve organizations from the problem of manpower constraints and skills shortages when it is effectively managed. Suggestions were made during research that IT outsourcing is the best option to keep the enterprise in business as the contracted party is an IT expert, with the ability experienced people to solve the problem. IT is a cost effective strategy giving the business access to skills that business could not otherwise afford to employ. Although organizations consider IT outsourcing as the best solution to business success, they have never considered that IT requires people who can understand what the business of the enterprise is about, monitor how IT is being used and identify opportunities for transformation that are driven by the business opportunities and technologies. As IT becomes more critical to business success, it is important that enterprises put in place both support and governance structures of IT rather than outsourcing.

The absence of well structured IT infrastructures in organizations makes the understanding and allocation of IT costs impossible for the operation of IT systems. Similarly, it becomes increasingly difficult to decide upon priorities for the use of IT related resources.

The next chapter provides recommendations based on the findings of the data collected. Recommendations for future study and recommendations for overcoming the barriers of IT governance implementation are also given in the next chapter.

CHAPTER 5: Recommendations and Conclusions

5.1 Introduction

The preceding chapter analyzed and presented the data that was collected. This chapter gives recommendations for future study and also outlines recommendations based on the results that were obtained in Chapter Four. In addition the questions posed in Chapter Two are answered and final conclusions drawn.

The limitations of the study are also highlighted in this chapter and in the recommendations some of these limitations are highlighted for future research. Finally conclusions based on the study are drawn.

5.2 Limitations

This study is a research project, in partial fulfilment of an M-tech degree in Information Technology at the Polytechnic of Namibia.

The research has been limited to issues related to the knowledge of an IT expert, finance personnel and business management, and information about strategic alignments and the contribution of IT governance in bridging the gap between IT and business experts rather than widening that gap within organizations in Namibia.

The research was conducted among the finance and IT specialists; therefore it could not be generalized to the entire Namibian population. In the next section the questions asked in Chapter Two are answered.

5.3 Research Questions

The following are the questions posed in Chapter Two. The author answers these questions based on the analysis and findings in Chapter Four and the reviewed literature in Chapter Two.

5.3.1. Is value obtained from investment in information technology ensured or is anticipated value of the investment in IT being achieved in Namibia?

Although many (67%) respondents claimed to have well structured IT objectives at the same time they were of the opinion that IT investment is not realised as anticipated.

Some believed that business value is better clarified when the business realised that the funds used in outsourcing services were not resulting in the IT solutions needed. IT standards of COBIT, ISO 17799 and ITIL that ensure that the enterprise has adopted a defined standard and that it has improved on its IT governance are not well known to the organizations in Namibia.

5.3.2. Is the IT governance benefit known or sufficiently calculated by enterprise's management in Namibia?

IT governance benefit is little known as a cost reduction. Organizations continue to operate beyond their budgeted figure. Organizations are not transparent and have no clarity about the role and responsibilities of IT systems. Benefits such as knowledge share and auditable become more difficult to be effectively assessed, as sharing ideas between departments and control assessments, and audited systems within the organizations are not exercised well. However, ITGI (2006), Weill (2003), Van Grembergen, De Haes and Guldentops (2004) indicate that IT governance helps organizations to define all the elements in preparing valid quotes, giving them tools for cost control, reduced adverse budget impacts. It also assists organizations in making all parties more accountable.

5.3.3. Is there an alignment between the business and IT strategies in most organizations in Namibia?

The majority (63%) of the respondents felt that a well-constructed agreement can provide value by having IT functions aligned with true business requirements. But their organizations still believe that a business strategy should be prepared and agreement made first and the IT strategies are then built in response to business strategies. However, ITGI (2005) makes it clear that IT strategy in most cases has become the business strategy. Therefore, they should be regarded as inseparable at every stage of the business strategy development.

The fulfilments of the organizations' goals and objectives seems far from reality as the gap on the alignment of business and IT strategies that can facilitate the achievement of such goals and objectives are widened since IT is still regarded as a "cost of doing business".

Respondents had no clear understanding what exactly strategic alignment between IT and business should be like and how their organizations can achieve these ultimate goals.

There are imbalances on the focus areas of IT governance driven by stakeholders in the enterprise, areas such as outcomes (value delivery and risk management) as well as drivers (strategic alignment, resource management and performance measures). These play an important role in the IT governance process.

5.4 Recommendation

Business organizations should realise that in this age of modern technology and cut-throat competition, it is of paramount importance to align their IT and business strategies. This can only be achieved by investing more in IT systems and changing the attitudes of personnel. Organizations need to ensure that their IT direction is managed and aligned with business needs. Organizations should ensure that support infrastructure has not been ignored at the business meetings.

The structure of IT should comprise board members and executives who are tasked with bringing together the needs of business and the services of IT suppliers in order for the enterprise to achieve its objectives. Given its significance as a force shaping the future of the enterprise, the IT structure and its governance should be reported directly to the board and executives.

Since the main duty of the board of director is to set the organization objectives and monitor progress towards their achievement, it is imperative to put into place practical IT systems which serve the enterprise's objectives. This will ensure that the IT strategies relate to the business goals of the organization and are not driven by new technical possibilities, or by the particular concerns of a user department.

The development of an IT management policy should be a matter of the executive and general management. This should be closely related to other management policies within the enterprise. Board members and the executive should be able to agree on a range of equipment and

software the technical staff are able and willing to support, and should be in line with the enterprise's overall objectives.

Organizations should make use of IT governance frameworks which are composed with a variety of structures, processes and relational mechanisms that cater for all types of organizations as they are different in operation and structure.

5.4.1. Future Research

Future research needs to be conducted with regards to the reasons why IT is still regarded as a "cost of doing business". In addition, there are imbalances on the focus areas of IT governance driven by stakeholders in the enterprise, areas such as outcomes (value delivery and risk management) as well as drivers (strategic alignment, regulatory compliance, resource management and performance measures). These areas play an important role in the IT governance process. Future research needs to be conducted to investigate the reasons for this situation.

Although Broadbent and Weill (1998) describe the different difficulties that organizations have experienced in aligning business with IT, future research need to be conducted to investigate and determine the solutions to such difficulties.

A review into the relevant literature from institutions such as ITGI, Institute of Internal Audit (IIA) and ISACA as well as from authors such as Weill, Sutter and Spafford to name just a few, has revealed that there is more empirical research into IT governance and barriers to the alignment of IT and business strategies in the organizations. This is in itself an important limitation of the research project and for any

initiatives that might emanate from it. The author also recommends empirical research and a needs assessment on who should be responsible for what during the implementation of IT governance as well as what can work and what can not work in IT governance framework.

Further research is also needed in issues like value contribution of IT, usage of combinations of frameworks and adequate alignment models beyond the strategic alignment model introduced above.

5.5 Conclusions

There is need for business critical IT systems to run at peak performance thereby fostering strategic changes, in an organization. To meet this need, IT organizations must evolve into trusted service providers that adapt quickly and offer the cost-effective, reliable, flexible IT services so critical to today's business initiatives. This development requires that organizations adopt an IT Governance framework (respectively select appropriate parts of frameworks), invest in the right types of technology, develop and implement the correct IT processes, and train people to apply these technologies and processes properly.

The research concluded that the degree to which an enterprise standardises its information flows and uses its integrated IT should be determined by the board and executives. The control of IT in the organizations in Namibia is considered the responsibility of IT specialists that understand the technology, but the IT resources did not remain the property of everybody in the enterprise.

The research concludes that it is important that the board and executives should possess a vision of what kind of the overall enterprise they are striving for using IT as a vehicle for change. This ensures that there is organizational coherence to the IT development taking place.
It can also be noted that most of the executive business managements are not IT literate and cannot effectively synergize the enterprise's business strategies.

It was difficult to get answers to all questions posed or highlighted in the research due to low responses received from the organisations randomly selected and conducted during the research.

6. Appendices

A. References:

1. Bhatnagar, S, 2004. *E-Government*. SAGE Publication. New Delhi
2. Brainy Dictionary, 2005. *Definition of Validity* [online]. Available from: www.brainydictionary.com. Accessed on October15, 2006.
3. Broadbent, M. and Weill, P, 1998. *Leveraging the new infrastructure – how market leaders capitalize on information technology*. Harvard Business School Press.
4. Brynjolffson, E. and Yang, S, 1996. Information Technology and Productivity: *A Review of the Literature*. Published by MIT Sloan School of Management Cambridge Massachusetts. Available from http://ebusiness.mit.edu. Accessed on January 05, 2007.
5. Calkins, C, 2002. *The How and Why of Statistical Sampling* [online]. Available from: http://www.andrews.edu/~calkins/math/webtexts/stat02.edu. Accessed on October 25, 2006.
6. Cangemi, M.P, 2006. *The magazine for IT governance Professionals: Shifting governance Roles and Responsibilities*. Published by ISACA. Information Systems Control Journal, volume 5, 2006.
7. Cangemi, M.P, 2006. The magazine for IT governance *Professionals: Audit, control and security of wireless technologies*. Published by ISACA. Information Systems Control Journal, volume 4, 2006.
8. Claude, L, 2006. Implementing COBIT in Higher Education: *Practices that Works Best.* Published by ISACA. Information Systems Control Journal, volume 4, 2006. Available from: http://www.isaca.org. Accessed December 12, 2006.

9. Crawford, D, 2006. Services science: *Trust beyond security conceptual modes with UML* Communications of the ACM Journal, volume 49, number 7, July 2006.
10. Crawford, D, 2006. Privacy and security in highly dynamic systems: *What is your software worth?* Communications of the ACM Journal, volume 49, number 9, September 2006.
11. De Haes, S. and Van Grembergen, W, 2004. *IT Governance and its Mechanisms.* Information Systems Control Journal, Vol. 1, 2004.
12. Ernest, J. and Musson, D, 2003. Corporate Governance and IT Governance: *exploring the board's perspective*, Macquarie Graduate School of Management. Sydney, New South Wales. Available from: http://www.ssrn.com. Accessed March 10, 2006.
13. Henderson, J.C and Venkatraman, N, 1999. Strategic alignment: *Leveraging information technology for transforming organizations*. IMB Systems Journal, vol 38, NOs 2 & 3, 1999.
14. ITGI, 2006. *Board briefing on IT governance second edition*. USA. Available from: www.itgi.org. Accessed on November 09, 2006.
15. ITGI, 2005. *COBIT 4.0 2005*, USA. Available from: www.itgi.org. Accessed on December 19, 2005.
16. ITGI, 2000. *COBIT* Third Edition, *Control Objectives,* USA. Available from: www.itgi.org. Accessed on December 19, 2005.
17. ITGI, 2000. *COBIT* Third Edition, *Implementation Tool Set* USA. Available from: www.itgi.org. Accessed on December 19, 2005.
18. ITGI, 2006. COBIT MAPPING: *Overview of international IT guidance, 2nd Edition*. Available from: www.itgi.org. Accessed on November 24, 2006.
19. ISACA, 2006. *Privacy,* Information Systems Control Journal, Vol. 6, 2006.
20. Ken, E, 1988. *Information Technology and Organizational change*. Taylor & Francis Publication London.

21. Ken, D, 2005. IT Governance: *Pass or Fail*. Published by ISACA. Information Systems Control Journal, volume 2, 2005. Available from: http://www.isaca.org. Accessed December 12, 2006.
22. Mott, J. and Leeming, A, 2003. *Information and communication Technology*. Second Edition. Book point Ltd, 130 Milton Park. Abingdon.
23. Quocirca's Straight Talking, 2006: *Drop those bad habits.* Published by Quocirca on: Tuesday 13 June 2006, Available from: http://www.silicon.com/research/specialreports/governance/0,3800011701,39159481,00.htm. Accessed on, November 14, 2006
24. Sekaran, U, 2000. *Research Methods for Business,* 3rd edition. United States of America: John Wiley & Sons, Inc.
25. Sethuraman, S, 2006. *Framework for Measuring and Reporting Performance of information Security Programs in Offshore Outsourcing*. Published by ISACA. Information Systems Control Journal, volume 6, 2006. Available from: http://www.isaca.org/jonline. Accessed December 12, 2006.
26. Sloan, S, 2000. *Introduction to Statistics and Probability, 4th Edition*.
27. Soh, C. and Lynne, M, 2005. How IT creates business value: *A process theory synthesis.* Available from www.bus.ucf.edu. Accessed on January 06, 2007.
28. Teoh, S, 2006. In *favour of IT governance.* Published on: Tuesday May 23, 2006 Available from: http://star-techcentral.com/tech/story.asp?file=/2006/5/23/corpit/14208148&sec=corpit. Accessed on November 10, 2006
29. *The importance of IT governance*. Published by silicon.com on: Tuesday 4 July 2006 Available from: http://www.silicon.com/research/specialreports/governance/0,3800011701,39160093,00.htm. Accessed on November 14,2006
30. Trochim, K, 2002. *What is the Research Methods Knowledge Base?* [Online]. Available from:

http://trochim.human.cornell.edu/kb/sampling.htm. Accessed on September 26,2006

31. Valiquette, A, 2006. *Introducing New ITS Systems into a Sarbanes-Oxley Compliant Environment.* Published by the Institute of Internal Auditors Vol. 9, November 10, 2006 Available from: http://www.theiia.org/ITAudit/index.cfm?catid=21&iid=502. Accessed on: November 14, 2006.
32. Van Grembergen, W, De Haes, S. and Guldentops, E, 2004. *Structures, process and Relational mechanisms for IT Governance*. Available from: www.itgi.org accessed on December 22, 2005.
33. Weill, P, 2003. IT for the non IT executive: *Don't just lead, govern! Implementing effective IT governance,* Tuesday, April 15, 2003. Available from: http://web.mit.edu/cisr/www . Accessed November 08, 2006.
34. Weill, P and Ross, J.W, 2005. *How effective are your IT Governance*, Research briefing, vol V number 1 B March 2005. Available from: http://web.mit.edu/cisr/www . Accessed on December 26, 2005.

B Abbreviations

CEO -- Chief Executive Officer

CFO -- Chief Financial Officer

CIO -- Chief Information Officer

COBIT -- Control Objectives for Information and related Technology

ERP -- Enterprise Resource Planning

ISACA -- Information Systems Audit and Control Association

ISO -- International Standardization Organization

IT -- Information Technology

ITGI -- Information Technology Governance Institute

ITIL -- Information Technology Infrastructure Library

IIA -- Institute of Internal Audit

OGC -- Office of Government Commerce

C Questionnaire

IT Governance Questionnaire

1. How do you define IT governance?----------

   ----
2. How do you define corporate governance?----------

   ----
3. What relationship do you see between IT governance and corporate governance?----------
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   ----
4. How effective do you consider IT governance to be in your organization?----------
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   ----
5. What in your opinion, makes effective IT governance?----------
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6. What business benefit have been gained from implementing your IT governance structure?----------

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7. Do you consider that IT governance is an effective tool that most organizations do or should have?----------

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8. Does corporate management perceive IT governance as a cost or a value-added process?----------

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9. What challenges to organizations do you see from your experiences in implementing your IT governance structure?----------

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10. How many IT projects do you undertake in a year?

Number of project (*write the number*)	None (*tick*)

11. How often do IT projects in your organization fail to deliver what they promised in terms of quality, time, and budget?

	Very often	Often	Sometimes	Rarely	Never	N/A
Quality						
Time						
Budget						

12. Are business strategy and IT strategy aligned?

	Strongly	Somewhat	Loosely
Degree of alignment			

13. How do you rate the following criteria for assessing IT based benefits?

Criteria	Very Important	important	Not important	None
User satisfaction				
Saving in operating cost				
Innovative advantage				
Increase in profits				

If different criteria please specify

_____

_____

_____

_____

14. (a) Is there an IT Governance Process in place (Meaning IT is aligned and assessed formally from business perspective in terms of effectiveness, efficiency, security, risk, performance)

    (b) Are the senior managers aware of the IT governance process?

	In place and executed	In place and partially executed	Not in place	N/A
(a) IT-Governance Process				
(b) IT-Governance Training				

15. What are the executive criteria of senior management for leveraging IT capabilities?

	Very Important	important	Not important
User satisfaction			
Return on investment			
Customer satisfaction			

16. Are the business aims of IT well defined in your organization?

	Well defined	Partially defined	Not defined
Business aims of IT			

17. How well are the procedures of the IT function organized in your organization or enterprise?

	Well articulated	Partially articulated	Not articulated
Function of IT			

18. How IT organization in the enterprise /company is structured to account for its needs?

	Meet company's need	Meet company's need Partially	Not Meet company's need	N/A
Structure of IT				

19. How would you rate the risks and challenges of technology management to your organization?

	Very high	high	Medium	Low	Very low
Challenges and risks of management technology					

20. How well does the enterprise /organization/company control IT Return on Investment?

	High	Moderate	Low	Very low
Return on Investment				

21. Do you feel/in your opinion the enterprise /organization/company has the right IT solutions?

	Very well	Moderate	loosely
Right IT adapted			

22. Is your IT organization structured to account for local and global needs?

	Very structured	Partially structured	Not structured
Organization of IT			

23. How often and how much does IT projects goes over budget?

	On budget	Over budget	Under budget	unnecessary
Operational budget of IT				

24. At what level is the IT decision making authority located in the organization?

	Board of director	Top management	Individual/users
IT decision making authority			

25. In your opinion how well is IT managed in the enterprise?

	Well managed	Partially managed	Not necessary
Management of IT			

26. Which IT skills are being developed and kept internal and which activities are out sourced by the enterprise?

	In house development	Out sourced	Not necessary
Development of IT skills			

27. Do you have an IT security?

Yes (Please tick)	No (please tick)

28. Are customers aware or kept informed about the security policy in your organization?

	Secured and customer kept informed	Secured but customers are not informed	Not secured
Security of IT			

29. How IT organization in the enterprise /organization/company is structured to account for its needs?

	Meet company's need	Meet company's need Partially	Not Meet company's need
Structure of IT			

30. How often do IT projects in your organization fail to deliver what they promised?

	Very often	Often	Sometimes	Not at all
Succeed and on time				
Succeed but not on Time				
Fail				

31. Are end users satisfied with the quality of the IT service in your organization?

	Very good	Good	Poor	Very poor
Quality of IT services				

32. Are sufficient IT resources, infrastructure and competencies available to meet strategic objectives?

	Sufficient	Moderate	Insufficient
IT Resource and infrastructure			

33. How much of the IT effort goes to firefighting rather than enabling business improvements?

	Good	Poor	Average
Impact of IT on business improvement			

34. Is the board regularly briefed on IT risks to which the organization is exposed?

	Every often	Sometimes	Not at all
Risks of IT			

35. Is IT a regular item on the agenda of the board and is it addressed in a structured manner?

	Always	Not always	None
Board meetings			

36. Does the board articulate and communicate the business objectives for IT alignment?

	Expressed	Sometimes	Not expressed
Alignment of IT			

37. Does the board have a clear view on the major IT investments from a risk and return perspective?

	Always	Sometime	None
Investment of IT			

38. Does the board obtain regular progress reports on major IT projects?

Yes (please tick)	No (please tick)

39. Is the board getting independent assurances on the achievement of IT objectives and the containment of IT risks?

	Every time	Sometimes	None
Objective of IT			

40. Are you willing to have interview with me at later stage in case I need more information?

Yes (please tick)	No (please tick)

End of questionnaire.