The State of IT Governance in the Top 20 IT Spending Companies in South Africa

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Abstract

Over the past years, IT governance has become a key focus area for IT stakeholders around the world, especially in companies with high IT spend. IT governance is about making choices about the IT spend. It uses a set of management practices by which business and IT management together determine the level of IT investment, decide where to invest IT resources, track IT performance, and establish the strategies and principles on which IT is managed.

The aim of this study was to assess the status of IT governance in the Top 20 IT spending companies in South Africa. This descriptive study examines how IT governance is being implemented through number of IT governance practices and assesses the maturity levels of IT governance in the Top 20 IT spending companies.

The paper also focused on how internationally recognized standards such as COBIT and ITIL are being utilised. The study revealed the number of findings with regards to the state of IT governance based on secondary objectives, which were to understand the levels of IT maturity in the top 20 IT spending companies, the drivers of IT governance and the implementation of IT governance practice.
Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It is not been submitted before for any degree or examination in any other University. I further declare that I have obtained necessary authorisation and consent to carry out this research.

____________________
Veronica Mmakoma Motloutsi 11 November 2009
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To my unborn baby, Omphile Thatogatsi Motloutsi, I dedicate this paper to you.
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<th>Description</th>
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<tbody>
<tr>
<td>ATM</td>
<td>Automated Teller Machine</td>
</tr>
<tr>
<td>BSC</td>
<td>Balanced Scorecard</td>
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<tr>
<td>CEO</td>
<td>Chief Executive Officer</td>
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<td>CIO</td>
<td>Chief Information Officer</td>
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<td>CMM</td>
<td>Capability Maturity Model</td>
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<td>COBIT</td>
<td>Control Objectives for Information and related Technology</td>
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<td>COSO</td>
<td>Committee of Sponsoring Organisations</td>
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<td>CRM</td>
<td>Customer Relationship Management</td>
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<td>CTO</td>
<td>Chief Technology Officer</td>
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<td>ERP</td>
<td>Enterprise Resource Planning</td>
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<td>ISACA</td>
<td>Information Systems Audit and Control Association</td>
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<td>ISO</td>
<td>International Standards Organisation</td>
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<td>IT</td>
<td>Information Technology</td>
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<td>ITG</td>
<td>Information Technology Governance</td>
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<td>ITGI</td>
<td>Information Technology Governance Institute</td>
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<td>ITIL</td>
<td>Information Technology Infrastructure Library</td>
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<td>ITSC</td>
<td>Information Technology Strategy Committee</td>
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<tr>
<td>JSE</td>
<td>Johannesburg Stock Exchange</td>
</tr>
<tr>
<td>OECD</td>
<td>Organisation for economic cooperation and development</td>
</tr>
<tr>
<td>PwC</td>
<td>PricewaterCoopers</td>
</tr>
<tr>
<td>ROI</td>
<td>Return on Investment</td>
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<tr>
<td>ROIT</td>
<td>Return on IT Investment</td>
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<tr>
<td>SLA</td>
<td>Service Level Agreement</td>
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<td>TCIT</td>
<td>Total Cost of Information Technology</td>
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Chapter 1: Introduction to Research Problem

1. Introduction and problem statement

For the first time the King Committee on Corporate Governance has addressed the issue of corporate governance for information technology (IT). In doing so, the third report on Governance in South Africa has addressed the pervasive nature of IT, its importance as part of the business strategy and the significant additional risks it introduces.

The release of King III forces companies to look at IT differently. IT is a big ticket item for most companies, and can consume considerable resources with little real value being created. Few organisations have not experienced the disappointment of a failed IT project. Many organisations are all too familiar with the ever increasing cost of IT not being matched with ever more effective IT solutions. Equally true is the tremendous impact IT has in enabling business to grow, reduce cost and improves performance (Hill et al, 2009).

According to King III report, Chief Information Officers (CIO) must be business oriented and provide a bridge between IT and the business. It further states that larger companies may consider appointing a CIO to take responsibility for the implementation and monitoring of IT governance within the company. Smaller companies may not appoint an individual responsible for this role, but should assign the responsibility to executive management reporting directly to the board.
King III states that “the board should be responsible for the overall IT governance” (King III, 2009). It is expected that through effective and responsible leadership, IT will be used to sustain and extend the company’s business strategy and corporate objectives. Although King III applies mainly to JSE listed companies, it is clear that IT governance is becoming a very important issue to all South African companies (including both public and private companies).

1.2. Enterprise Governance

An increasingly educated and assertive set of stakeholders is concerned about the sound management of their interests. This has led to the emergence of governance principles and standards for overall enterprise governance. Regulation establishes board responsibilities and requires that the board of directors exercise due diligence in its role. Investors have also realised the importance of governance, because they are willing to pay a premium of more than 20% on shares of the enterprise that have shown good governance practices in place (McKinsey, 2002).

Enterprise governance is a 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 (ITGI, 2003). While governance development have primarily been driven by the
need for the transparency of enterprise risks of protection of shareholder’s value, the pervasive use of technology has created a critical dependency on IT that call for a specific focus on IT governance.

The current IT environment is entrenched in the business environment and requires regulatory compliance, cost control, availability, risk management, alignment with the business, timely project delivery, change, and innovation in order to deliver stakeholder value (PwC, 2009).

1.3. IT Governance

IT governance is the responsibility of the board of directors and executive management. It is an integral part of enterprise governance and consists of the leadership and organisational structures and processes that ensure that the organisation’s IT sustains and extends the organisation’s strategies and objective (Isaca, 2009). The overall objective of IT, therefore, is to understand the issues and strategic importance of IT, so that the enterprise can sustain its operations and implement the strategies required to extend its activities into the future. IT governance aims at ensuring that expectations for IT are met and IT risks are mitigated (ITGI, 2003).

Furthermore, according to ITGI (2003), successful enterprises understand the risks and exploit the benefit of IT, and find ways to deal with:

- Aligning IT strategy with the business strategy.
- Cascading IT strategy and goals down into the enterprise.
• Providing organisational structures that facilitate the implementation of strategy and goals.
• Creating constructive relationship and effective communications between business and IT, and with external partners.
• Insisting that an IT control framework be adopted and implemented.
• Measuring IT performance.

At the heart of governance, the responsibilities of setting strategy, managing risks, delivering value and measuring performance, are the stakeholder values that drive enterprise and IT strategy. Sustaining the current business and growing into new business models are certainly stakeholder expectations and can be achieved only with adequate governance of the enterprise’s IT infrastructure (Gomes, 2007).

1.4. Context

The growth in the importance of IT, changes in corporate governance requirements, and advances in the global environment have resulted in an increased reliance on IT governance. Within organisations, IT governance has gained further attention due to increased expectations by organisational stakeholders that IT provides the necessary flexibility to allow organisation to exploit new opportunities and technologies within an increased dynamic environment (Gomes, 2007). The use of IT has the potential to be the major driver of economic wealth in the 21st century. While IT is already critical to enterprise success, it provides opportunities to obtain a competitive advantage,
and offers a means for increasing productivity, it will do 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. IT is fundamental to managing enterprise resources, dealing with suppliers and customers, and enabling increasingly global and dematerialised transactions. IT is important to recording and disseminating business knowledge. An ever larger percentage of the market value of enterprises has transitioned from the tangible (inventory, facilities, etc.) to the intangible (information, knowledge, expertise, reputation, trust, patents, etc.). Many of these assets revolve around the use of IT. Moreover, a firm is inherently fragile if its value emanates more from conceptual, as distinct from physical assets. Good governance of IT therefore is critical in supporting and enabling enterprise goals (ITGI, 2003).

Weill (2004) states that with IT now so intrinsic and pervasive within enterprises, governance needs to pay special attention to IT, reviewing how strongly the enterprise relies on IT and how critical IT is for the execution of the business strategy, since:

- IT is critical in supporting and enabling enterprise goals.
- IT is strategic to the business (growth and innovation).
- Due diligence is increasingly required relative to the IT implications of mergers and acquisitions.
1.5. Rationale of the research

KPMG (2004) conducted a survey on IT Governance. Through their survey, they identified that the majority of organisations that participated did not use recognised IT governance frameworks. Frameworks such as COBIT and ITIL had fewer adopters than expected. The general sentiment among participants was that in order to achieve the implied requirements of good governance, a flexible approach in the implementation of an effective framework needed to be followed.

Gomes (2007) also conducted a research on the state of IT governance in South Africa. In his findings, he indicated that South African organisations acknowledge the advantages provided by IT governance as a mechanism for driving value through the business. The on-going challenge is to ensure that IT governance implementation fulfils expectations and continues to deliver the expected business benefits. There is also inconsistent focus on aspects of IT governance, specifically financial aspects.

A 2007 survey commissioned by ISACA found that while many IT functions had gone beyond being concerned only about the day to day operational activities and addressing regulatory compliance requirements such as risk management and internal controls, less than 15% were emphasising good governance and were able to effectively manage the delivery of value to the stakeholders.
Most recently with the release of King III, companies are expected to implement processes, structures and other mechanisms to achieve the organisation’s strategies and objectives. With all these research findings in mind and considering the growing investment in IT, it is important to investigate the status of IT governance in the companies that invest a significant sum of money in IT. The study will mainly focus on South African companies (companies established and operating in South Africa).

1.6. Purpose

Weill and Ross (2004a) suggest that effective IT governance is the most important predictor of the value an organisation generates from IT. As companies strive to generate value from IT and to be effective, managers must design and implement IT governance (Weill and Ross, 2004b).

Aligned with the above background, the purpose of this research is to investigate the status of IT Governance in the top 20 IT spending companies in South Africa. This research builds on Gomes’ (2007) study on the state of IT governance in South Africa. The research outcome will contribute toward understanding the state of IT governance theory.
1.7. Research Scope

This research is based on the ITGI’s Control Objectives for Information and related Technology (COBIT) framework. COBIT is focused on what is required to achieve adequate management and control of IT (ITGI, 2007). Whilst there are a number of management frameworks, models and standards available, COBIT is the most widely adopted framework for implementing IT governance (Hill et al, 2009).

In order to achieve the research objectives, this research paper will focus on the top 20 IT spending companies and their IT governance practices, specifically:

- Strategic alignment of IT with the business;
- Value Delivery;
- Resource Management;
- Performance Management; and
- Risk Management.

1.8. Summary

This chapter introduced and explained the importance of IT Governance. It also provided an overview of corporate and IT governance, as well as responsibilities of various stakeholders in ensuring effective governance.
IT governance is a much debated issue nowadays. Increasingly, top management is realising the significant impact that IT can have on the success of the enterprise. It is for this reason that the pervasiveness of IT within most commercial and public organisations has placed increased pressure on overseeing the effectiveness of IT.

The background and rationale for the research was explained in detail. It is important to note that, IT systems have become such an integral part of doing business, and King III now provides specific guidelines to ensure effective IT governance. It is necessary for directors to ensure proper management of operational risk with regard to IT systems and security. Directors need to take the necessary steps to ensure authenticity, confidentiality, security, and integrity of data, as well as the availability, reliability and functioning of IT systems.

South African companies should realise that the implementation of IT governance is not only about regulation but provides them with a competitive advantage and offers a means for increasing productivity. The next chapter will review the theory relating to IT governance.
Chapter 2: Literature Review

2. Introduction

The purpose of this chapter, in line with the overall research problem is to review literature relating to IT governance practices within organisations. It contextualises studies conducted internationally and presents the theoretical framework within which the research is done. This chapter starts by defining governance and its context. It includes discussion about the IT governance modes, frameworks and focus areas or practices. A number of IT governance model and frameworks have been identified and a model for use as an analytical tool is selected. The chapter concludes with a discussion on the effectiveness of IT governance.

2.1. Corporate Governance

Corporate governance issues have always been integral to business practices, beginning with the creation of corporate structures and distinction between owners and managers (Dallas, 2004). Corporate Governance addresses ways that managers can follow the interest of shareholders (Vives, 2000). A broader definition of corporate governance is more concerned with the fact that a firm has many stakeholders other than its shareholders: employees, customers, suppliers, citizen, whose welfare must be taken into account. Corporate Governance is about the design of institutions to make managers internalise the welfare of stakeholders in the firm (Dallas, 2004).
Organisations seek to mirror their corporate governance arrangements in their strategic business units, including IT, in order to lower their organisational coordination cost (Capararello, 2005). Some researchers believe that the mode of corporate governance significantly influences the mode of IT governance: organisations that have centralised their corporate governance also tend to centralise their IT governance, whereas organisations that have decentralised their corporate governance tend to decentralise their IT governance (Capararello, 2005). Consequently, the organisational need of formal IT governance emerges. This allows individual managers to resolve issues as they arise adopting a wide-organisation view.

2.2. Corporate Governance and IT

The draft king report III acknowledges IT as an integral part of the enterprise strategy, it has significant impact on corporate governance in terms of its role in the provision of information and the impact it has on improved fiduciary control, King III, 2009). According to (OECD, 2004) IT governance responsibilities form part of a broad framework of enterprise governance. OECD (2004) defines corporate governance as providing the structure for determining organisational objectives and monitoring performance to ensure that objectives are attained.

Some of them have origin from other disciplines, like finance, and were re-thought on IT issues. Two of them are:

i. the Report of the Committee on the Financial Aspects of Corporate Governance
ii. The Bank for International Settlements (BIS), in Enhancing Corporate Governance in Banking Organisations.

Even if the first publication is aimed at financial reporting and auditing, it alludes to wider concepts of governance. In fact, it identifies various board governance accountabilities, and responsibilities, such as setting strategic aims, leadership, supervising management and so on. Those concepts can be also extended and applied by IT managers to investigate the depth of enterprise’s reliance on IT (Capararello, 2005).

The second publication defines governance as the set of relationships between the organisation’s management and its governing managers, and all stakeholders. Governance should also provide the structure through which to define:

- The overall organisation’s objectives.
- The method to achieve those objectives.
- The method to monitor and describe the organisation’s performances.

Each stakeholder of any organisation is interested in its organisation sustaining and growing (Capararello, 2005). Bringing this to the South African context, IT governance is dealt with in detail in King III for the first time. According to the draft King III report (2009), in exercising their duty of care, directors should ensure that prudent and reasonable steps have been taken in regard to IT governance. IT governance should focus on four key areas:
• Strategic alignment with the business and collaborative solutions, including the focus on sustainability and the implementation of ‘green IT’ principles;
• Value delivery: concentrating on optimising expenditure and proving the value of IT;
• Risk management: addressing the safeguarding of IT assets, disaster recovery and continuity of operations; and
• Resource management: optimising knowledge and IT infrastructure.

The above essentially mean that:

• IT should be on the board agenda.
• IT performance should be measured and reported to the board.
• The board should set a management framework for IT governance based on a common approach (for example COBIT).
• Audit committees should oversee IT risks and controls.

2.3. IT Governance Defined

Weill and Ross (2004a) define IT governance as “specifying the decision rights and accountability framework to encourage desirable behaviour in using IT.” According to them, IT governance is not about making specific IT decisions but rather determines who systematically makes and contributes to those decisions. IT governance reflects broader corporate governance principles focusing on the management and use of IT to achieve corporate performance goals. Moreover, the type of leadership of IT management influences IT governance. For example, in large organisations IT leadership positions are often characterised as CIOs (Green, 2001). The span of responsibility, authority, placement within
the organisation, and organisational impact varies considerably for each organisation. All these elements significantly affect the success of IT governance and decision-making structures (Penrod, 2003).

Another definition and perspective for IT governance is by Van Grembergen (2003), who states: “IT governance is the organisational capacity exercised by the Board, executive of business and IT.” Weill and Ross (2004b) go further and state that companies with effective IT governance have profits that are higher than other companies pursuing the same strategies, and one viable explanation for this differential is that IT governance specifies accountabilities for IT-related business outcomes and helps companies align their IT Investment with their business priorities. Furthermore, IT governance applies principles similar to those for financial governance (i.e., who is authorised to commit the company to a contract or authorise a payment) to IT management (Weill, 2004).

According to ITGI (2005a) IT governance focuses on the transparent and efficient management of an organisation’s IT resources, aiming to ensure that IT sustains and extends the organisation’s strategy and objectives. IT can be characterised by attributes such as transparency, control, effectiveness, and efficiency. These attributes are described from the perspective of two research streams as shown in figure 1 (Lee and Lee, 2006):
IT governance is responsible for the provision of control mechanisms for governing IT (Gomes, 2007). This responsibility is underpinned by the requirement of ensuring that IT remained aligned with organisational strategy through integration and alignment with the corporate governance framework (Gillies, 2005). The responsibility of IT governance does not only belong to the organisational IT but the entire organisation ensuring that an effective, well-conceived IT mechanism is in place to provide a coherent, disciplined overview of IT investment decision (Jordan and Musson, 2004).

Organisations are now challenged that IT delivers the expected results while maintaining alignment with the organisational goals without becoming overwhelmed by these complexities. The responsibility of balancing these often conflicting objectives is allocated to IT governance though the provision of well implemented, formal, defined, flexible controls and processes (Gomes, 2007).
2.4. IT Governance model

The purpose of IT governance, as defined by ITGI (2003), is to direct IT endeavours to ensure that IT’s performance meets the following objectives:

- Alignment of IT with the enterprise and realization of the promised benefits,
- Use of IT to enable the organisation in exploiting opportunities and maximizing benefits,
- Responsible use of IT resources,
- Appropriate management of IT-related risks.

The IT governance process starts with setting IT objectives for the organisation, and providing the initial direction. Then, IT activities are developed and their performance measured and compared to objectives. The result of measurement redirects and balance activities and objectives if necessary (see figure 2).
According to the ITGI (2003), IT governance focuses its attention, at a highest level of analysis, on two main macro-activities:

- IT delivery of value to the business, which is driven by strategic alignment of IT with the business;
- Mitigation of IT risks, which is driven by embedding accountability into the organisation.

Both activities need to be supported by adequate resources and measured to ensure that results are obtained. At a second level of analysis, it’s possible to identify five main focus areas for IT governance, all driven by stakeholder value (see figure 3).
Figure 3 shows that on the IT Governance Model, there are three drivers:

- Strategic Alignment, focusing on aligning IT with business objectives.
- Resource Management, optimising knowledge and IT infrastructure.
- Performance Management, tracking project delivery and monitoring IT services.

The following two areas are the outcomes

- Value Delivery, concentrating on optimising expenses and proving the value of IT.
- Risk Management, addressing the safeguarding of IT assets, disaster recovery, and continuity of operations.

It could be observed that from these fields, value delivery and risk management are expected goals while the others represent, in fact, just directions of action. Observing the accepted statement that IT governance developed from corporate
The state of IT governance in the Top 20 IT spending companies
governance concept we should underline that the five IT governance principles sustain the corporate governance key attributes: driving and steering, controlling, accountability and not at last openness and transparency (Gray, 2004).

![Figure 4: A relationship between IT Governance and Corporate Governance (Gray, 2004)](image)

IT governance has a continuous life cycle which begins, normally, with establishing the strategy and aligning with the overall organization objectives, continue with strategy implementation, value delivery and risk management. Periodically, the strategy has to be observed; outputs measured and reported in order to act properly.

### 2.4.1. Strategic Alignment

Corporate objectives are attained through the effective and efficient management of IT resources. It enables IT management to align IT activities with the performance and sustainable objectives of the company (Hill et al,
The involvement of IT in strategy formulation is a two-way process. IT governance is also a process in which the IT strategy drives 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 resources consumed (Curley, 2004). Alignment of IT has been synonymous with IT strategy. For IT Governance, alignment encompasses more than strategic integration between the future IT organisation and the future enterprise organisation. It is also about whether IT operations are aligned with the current enterprise operations (see figure 5).

![Figure 5: IT/Enterprise Alignment (ITGI, 2005a)](image)

There has to be confidence that IT can support and enable the resultant strategy but, at the same time, IT capabilities and opportunities must provide
essential input to what the strategy should be (Ross and Beath, 2002). Every business and not-for-profit entity needs to develop an understanding, shared at the board level and then cascaded throughout the organisation, of the key processes that contribute to business success and, crucially, the importance that IT has to these processes. This is best achieved by a detailed mapping of all key value contributing processes and the part that IT plays in making them happen. Only by developing such an understanding will there be any clarity of the extent to which IT and business process alignment contributes to long-term, sustainable enterprise success (Peppard and Ward, 2003).

Treacy and Wiersema (1995) introduce the concept of value disciplines that may be used to identify the potential effect of different IT supporting and enabling strategies. These value disciplines are:

- **Operational excellence:** emphasising efficiency and reliability, leading the industry in price and convenience, minimising overhead costs, streamlining the supply chain.
- **Customer Intimacy:** focusing on business and sustaining client relationships, customer service, responsiveness, and customisation based on deep customer knowledge.
- **Product or service leadership:** continuing product innovation, finding new solutions to problems and rapid commercialisation/exploitation.

IT is an enabler in the Treacy and Wiersema (1995) model. In each of the value disciplines there are two basic levels of IT support required. First is the ‘level of IT necessary to exist in the market’ and second is ‘the level of IT employed by the leaders in the market’, for each business area (i.e., operational excellence,
customer intimacy and product innovation), technology is deployed in different ways. However, each has a ‘threshold of participation’ with the market leaders demonstrating innovative and extensive use of IT.

There is no one-size-fits-all approach for maximising the alignment of IT with the business and all of its components. Much depends upon the nature of the business, its size, its market, its dependence upon in IT, its leadership style and culture. Additional factors that help dictate the organisation’s alignment components and structure include the in-house IT capabilities, the dependence upon outsourcing, and the nature of outsourcing and overall governance structure (Peterson, 2003)

In keeping with other sources of good practice for corporate governance, King III requires the board to translate its leadership into clear statements of direction that management of the company can follow (Hill et al, 2009). IT governance, like other governance subjects, is the responsibility of the board and executives. It is not an isolated discipline or activity, but rather is integral to enterprise governance (OECD, 2004). According to ITGI (2003), the CEO and his/her board colleagues have a significant role to play in the determination of IT strategy and its implementation. Amongst the key responsibilities for the CEO and the board are (ITGI, 2005a):

- Approval of all significant IT-related business investment.
- Approval of the business strategy and its IT implications.
- Ensuring that the IT function has the appropriate resources and the capability to deliver and maintain the IT element of the business strategy.
• Asking the right questions and ensuring that all IT risks are properly identified and mitigated.
• Gaining assurance that value is obtained from IT Investment.

2.4.2. Value Delivery

“Value delivery is about executing the value proposition throughout the delivery cycle, ensuring that IT delivers the promised benefits against the strategy, concentrating on optimising costs and providing the intrinsic value of IT” (ITGI, 2005b). Starting from the premises of corporate governance, underlining that “a company, in first place, has to aim for the maximization of the value of their shares on long term”, and IT governance, the implementation of the new IT techniques have to add value to organization by the quality of the services, expenses optimization, offer of pertinent and useful data delivered timely. The objective of this principle, in a general manner, is to guarantee that IT will deliver the benefits expected by organization strategy through costs optimization and profit maximization (Mirella, 2005)

According to Peterson (2003) to ensure that value is obtained from investment in IT is an essential component of IT governance. No investment, whether IT-related or not, should be undertaken without full knowledge of the expected cost and the anticipated return. Expected returns should always be related to risk as given the higher likelihood of failure, high risk projects should always have an anticipation of higher return. Ensuring that the right projects are approved in the first place implies the need for accurate predictive costing of the total project across its lifetime and robust predictions of the potential returns (ITGI, 2003). To ensure that the total process works and becomes part of the culture of the
organisation, it is essential to establish proper tracking mechanisms to determine the actual value delivered and enable accountability (Kan, 2004).

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 for order/service fulfilment, customer satisfaction, employee productivity and profitability (Weill and Broadbent, 1998). Several of these elements are either subjective or difficult to measure, something all stakeholders need to understand. For effective IT value delivery to be achieved, both the actual costs and the return on investment need to be managed (ITGI, 2005b). Weill and Broadbent (1998) state that different levels of management and users perceive the value of IT differently (see figure 6).

Figure 6: Views of IT Value (Weill and Broadbent, 1998)
Figure 6 shows that the higher one goes in the measurement hierarchy, the more dilution occurs (i.e., the less influence IT management can exercise). This also means that measuring the impact of an IT investment is much easier at the bottom of the hierarchy than at the top. However, successful investments in IT have a positive impact on all four levels of the business value hierarchy. Furthermore, there is an increasing separation between the creation of value and its subsequent realisation. Therefore, it is important not only to focus on measurements based on value realisation (i.e. financial measures), but also to take into account the enterprise’s performance in creating value (Weill and Broadbent, 1998).

In terms of IT Investment categories, many researchers have examined the productivity and business value of organisational level IT investments (Aral and Weill, 2007), furthermore have mentioned that organisations derive greater value per IT rand by having stronger organisational capabilities. These results suggest a move away from monolithic conceptualisation of IT towards a disaggregated view of IT assets, which can be viewed as (Aral and Weill, 2007):

- IT Infrastructure provides the foundation for shared IT services used by multiple IT applications. Infrastructure investment are made to provide a flexible base for future business initiatives and, thus made in anticipation of future business needs.
- Transactional Investments are made to automate processes, cut costs or increase the volume of business a firm can conduct per unit cost.
• Informational Investments provide information for managing, accounting, reporting and communicating internally and with customers, suppliers and regulators. These investments can support the responsiveness, control, reliability and adaptability of firms and enables more effective decision making.

• Strategic Investments re-position firms in the market place by supporting entry into a new market or the development of new products, services, or business processes. Successful strategic investment typically changes the nature of service delivery or organisational process in an industry, but become non-strategic when competitors commoditise the capability. When ATMs were introduced in the banking industry, they changed the nature of service delivery and garnered competitive benefits for early adopters.

A view of organisational IT capabilities as a mutually reinforcing system of practices and competencies that both strengthens and broadens the performance impacts of IT (Aral and Weill, 2007). From this perspective, there are compelling theoretical reasons for investigating how companies allocate investment across different types of IT resources (which consist of IT Assets and IT capabilities) as shown in figure 5.
According to Xue et al (2008) there are three broad factors that could affect IT governance: an organisational investment characteristic, its external environment, and its internal context. An organisation’s external environment comprises customers, suppliers, competitors, government, industry associations, and other social and economic factors which impact governance of IT Investment (Porter, 1980). External environment have an impact on IT governance based on resource and capability requirements they impose on an organisation (Xue et al, 2008). Organisational strategy, structure and IT function power are the salient internal factors that influence IT investment decision (Xue et al, 2008).
2.4.3. Resource Management

A key to successful IT performance is the optimal investment, use and allocation of IT resources (people, application, technology, facilities, and data) in servicing the needs of the enterprise (Feeny, 1998). In most enterprise, the biggest portion of the IT budget relates to ongoing operations. The right way to achieve IT excellence is to efficiently allocate IT resources. Many organizations failed in maximisation of the IT resources allocation. In the last years, a major challenge was the proportion of the outsourcing from the activities of the organization (Mirella, 2005).

Effective governance of IT operational spending requires effective control of the control base: the IT assets and their focus where they are needed most. Enterprises should align and prioritise the existing IT services that are required to support business operations based on clear service definitions (Gray, 2004). These definitions and related performance metrics enable business oriented service level agreements providing for effective oversight and monitoring of both internal and outsourced IT services. The IT assets should be organised optimally so that required quality of service is provided by most cost effective delivery infrastructure (Mirella, 2005). Companies that achieve this not only realise great cost savings but also are placed to take on the next IT initiative, judiciously introducing new technologies and updating or replacing obsolete system (ITGI, 2003).
2.4.4. Risk Management

Different authors define risk management as being “the process of identifying the vulnerabilities and threats from the framework of an organization as well as designing procedures in order to minimize the impact of them on IT resources” (Mirella, 2005). The risk on organization level cannot be eliminated; it will exist all the time; the management of the organization is responsible with minimizing it to an acceptable level. Risk management should be a continuous process which begins by assessing the level of exposure of the organization and identifying the main incident risks. Once identified, risks have to be minimized using control procedures and finally residual risk should be adjusted at acceptable level (Gray, 2004).

The management of risk is a cornerstone of IT governance, ensuring that the strategic objectives of the business are not jeopardised by IT failures (ITGI, 2005c). According to ITGI (2003) the universal need to demonstrate good enterprise governance to shareholders and customers is the driver for increased risk management activities in large organisations. Therefore, the board should manage enterprise risk by:

- Ascertaining that there is transparency about significant risk to the enterprise and clarifying the risk taking or risk avoidance policies of the enterprise.

- Being aware that the final responsibility for risk management rests with the board so, when delegating to executive management, making sure the constraints of that delegation are communicated and clearly understood.
● Being conscious that the system of internal control put in place to manage risks often has the capacity to generate cost-efficiency.

● Considering that a transparent and proactive risk management approach can create competitive advantage that can be exploited.

● Insisting that risk management be embedded in the operation of the enterprise, respond quickly to changing risks and report immediately to appropriate levels of management, supported by agreed principles of escalation (what to report, when, where and how).

2.4.5. IT Performance Management

Performance management tracks and monitors strategy implementation, project completion, resource usage, process performance, service delivery and the achievement of expected outcomes (Hill et al, 2009). IT performance must be assessed on an on going basis against the agreed-upon outcomes of the IT organisation (Weil, 2004). Performance measurement must also include a review of remedial action where performance is not as expected. Independent assurance about effectiveness of an implemented internal control framework as the performance of the IT organisation should be considered (Thompson Jr. et al, 2005).

According to Thompson Jr. et al (2005), performance management underpins IT governance by proving the value proposition and measuring the performance of IT. Performance measurement necessitates consideration of:

● Outcomes expected by stakeholders - key goal indicators

● Measurement of the enablers used to achieve these outcomes
Management’s control of activities critical to the success of the enablers.

According to Peterson (2003) IT goals and measures must flow directly from strategic goals. IT managers and staff should not develop performance management systems that optimise operational customer results without considering a company-wide perspective. IT goals and measures in support of individual operational customers must meet IT department or unit objectives. In turn, IT department or unit objectives must map directly to both programme and company-wide strategic directions or goals. The result is that IT goals and measures track in a seamless fashion back to the company’s business objectives and corporate goals.

In terms of IT Governance roles and responsibilities in IT Performance Management, it is the responsibility of the board and executive management to define and monitor performance measures that assess the business value of IT. Duffy (2002) summarises the roles of board, CEO and CIO in performance management as follow (see table 1).

Table 1: IT Performance Management responsibilities

<table>
<thead>
<tr>
<th>Board Responsibility</th>
<th>CEO responsibility</th>
<th>CIO responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>The board is responsible for ensuring that IT delivers on the promises of relates strategies through clear expectations and measurement. The board must work with the CEO to define and monitor</td>
<td>The CEO is responsible for ensuring strong links between business objectives and performance measures. It is the CEO’s responsibility to develop an appropriate incentive scheme to drive</td>
<td>The CIO responsible for developing and managing the IT budget, including short term and long term investment strategies. The CIO is responsible for developing realistic IT performance</td>
</tr>
</tbody>
</table>
Board Responsibility | CEO responsibility | CIO responsibility
--- | --- | ---
performance measures. It is also board’s the responsibility to ensure that IT investments represent a balance of risk and benefit, and budgets are acceptable and reflects the overall organisational financial objectives | adherence to performance measures. The CEO is responsible for integrating the IT budget and investment plan into the overall financial plan, ensuring that it is realistic, balanced and achievable. The CEO is then responsible for reporting progress to the board on a regular basis | measurements plan along with appropriate metrics. In conjunction with the CEO, it is CIOs responsibility to implement and manage a performance measurement scheme.

2.4.6. IT Governance Implementation Framework

Based on the work of Peterson (2003), De Haes and Van Grembergen (2004) propose that IT governance can be implemented through a framework of structures, processes, and relational mechanisms. This framework is presented in Table 2. Structures include the existence of well defined roles and responsibilities and IT steering committees. Processes involve strategic decision making and the use of various IT governance and management standards (e.g. COBIT and ITIL) which can provide the IS organization with the means of examining its activities and its value to business. Relational mechanisms include shared learning and strategic dialogue between business and IT, and ensuring proper communications at all times (Bhattachariya and Chang, 2008).
Table 2: A framework of structures, processes and relational mechanisms for implementing governance (De Haes and Van Grembergen, 2004) quoted in (Bhattacharjya and Chang, 2008)

<table>
<thead>
<tr>
<th>Structures</th>
<th>Processes</th>
<th>Relational Mechanisms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tactics</strong></td>
<td>Strategic IT decision making</td>
<td>Stakeholder participation</td>
</tr>
<tr>
<td>- IT executives and accounts</td>
<td>- Strategic IT monitoring</td>
<td>- Business/IT partnerships</td>
</tr>
<tr>
<td>- Committees and councils</td>
<td>- Stakeholder participation</td>
<td>- Strategic dialog</td>
</tr>
<tr>
<td>- Roles and responsibilities</td>
<td>- Business/IT partnerships</td>
<td>- Shared learning</td>
</tr>
<tr>
<td>- IT organization structure</td>
<td>- Active participation by principal stakeholders</td>
<td></td>
</tr>
<tr>
<td>- CIO on board</td>
<td>- Balanced IT scorecards</td>
<td>- Collaboration between principal stakeholders</td>
</tr>
<tr>
<td>- IT strategy committee</td>
<td>- Information economics</td>
<td>- Partnership rewards and incentives</td>
</tr>
<tr>
<td>- IT steering committee(s)</td>
<td>- Service level agreements (SLA)</td>
<td>- Business/IT co-location</td>
</tr>
<tr>
<td></td>
<td>- COBIT and ITIL</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- IT alignment/governance maturity models</td>
<td></td>
</tr>
</tbody>
</table>

2.5. **IT Governance Implementation through the best practices**

IT governance doesn’t follow a unique pattern in implementation but it has to use the best practices in this field: COSO, COBIT, ITIL and ISO17799 (Mirella, 2005).
Hill et al (2009), however suggests that there are a number of management frameworks, models and standards available. COBIT is the most widely adopted framework for implementing IT governance. Obviously, COBIT distinguishes itself as a well recognized framework for IT governance and auditing accounting IT systems. It is designed as an accessible guide for management, users, auditors and all the persons who use the computer for their business in order to ensure them confidentiality, integrity and availability of data and information (Stephenson, 2004). Other frameworks are shown in diagram below:
2.5.1. COBIT Framework

IT Governance Institute, principal supporters of COBIT, acts for understanding and adhesion to IT governance principles. Principles driving the framework of COBIT consist of a set of constraints and relationships between concepts of information, process and IT recourses represented as dimensions of a cube (COBIT). Golden rule of COBIT can be state as follows: IT resources can be administered by a set of natural combined processes that (together) provide the information the organisation needed in order to achieve IT objectives (Stephenson, 2004).
COBIT has the scope to meet the multiple needs of management by bridging the gaps between business risks, control needs and technical issues (Capararello, 2005). The COBIT IT framework starts with a pragmatic premise: “In order to provide the information that the organisation needs to achieve its objectives, IT resources need to be managed by a set of naturally grouped processes” (ITGI, 2007). According to Hill et al (2009), COBIT IT framework provides a wide set of high-level control objectives, one for each of the IT processes, grouped into four domains:

- planning and organisation, that includes: defining a strategic IT plan, defining the information architecture, determine the technological direction, manage the IT investment and so on,
acquisition and implementation, that includes: identify automated solutions, acquire and maintain application software, develop and maintain procedures,

delivery and support, that includes: define and manage service levels, manage data, manage operations, and

monitoring, that includes: monitor the processes, obtain independent assurance, and provide for independent audit.

Management has the objective to reach its business objectives. For that reason, it must manage IT activities to reach an effective balance between managing risks and realising benefits. In order to ensure this balance, management must identify the activities to be performed, measure the progress and determine how well the IT processes are performed (Stephenson, 2004).

To support these management needs and to evaluate an organisation’s level of achievement of IT governance, the COBIT proposes the Maturity Model for IT governance. It assumes the following values (ITGI, 2007):

- non-existent: there is a complete lack of any IT governance process,
- initial /ad hoc: the organisation recognize that IT governance issues exist but they need to be addressed,
- repeatable but intuitive: there is global awareness of IT governance issues,
- defined process: the need to act with respect to IT governance is understood and accepted,
- managed and measurable: there is full understanding of IT governance issues at all levels, supported by formal training,
optimised: there is advanced understanding of IT governance issues and solutions.

<table>
<thead>
<tr>
<th>Non existent</th>
<th>Initial</th>
<th>Repeatable</th>
<th>Defined</th>
<th>Managed</th>
<th>Optimised</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Figure 11: IT Governance Capability Maturity Levels (ITGI, 2005)

2.6. Characteristics of top IT spending companies

Companies that link their IT investments to their business strategies are well placed to outrun their competitors along desired performance dimensions. According to Weill and Ross (2004a) these companies are called IT savvy and have developed five mutual characteristics.

- Intensity of electronic communication media for internal and external communication and work practices
- Internet based architecture for key functions
- A high degree of digitisation of repetitive transactions
- Technical skills and business skills of IT people, IT skills of business people and ability to hire IT people
- The degree of senior management commitment to IT projects and the degree of business units involvement in IT decision

In terms of Key IT decision domains, effective IT governance requires careful analysis about who makes decisions and how decisions are made in at least
four critical domains of IT: principles, infrastructure, architecture, and investment and prioritization. The four domains are highly inter-related but a firm often has different governance archetypes for the different domains (Weill and Woodham, 2007): IT principles are high-level statements about how IT is used in the firm. IT principles capture the essence of a firm’s future direction and how IT will be used (Weill and Broadbent, 1998):

- IT infrastructure strategies describe the approach to building the IT foundation for the firm. IT infrastructure is made up of the shared and standard IT services that are centrally coordinated including the networks, help desk, shared customer data, and shared and standard applications such as ERPs and customer relationship management (CRM) systems. Decisions about IT infrastructure strategy include requirements for infrastructure capability as well as the location of capabilities within the firm.

- IT architecture provides an integrated set of technical choices to guide the organisation in satisfying business needs. The architecture is a set of policies and rules that govern the use of IT and plot a migration path to the way business will be done. The architecture includes the standards and guidelines for technology, use of data, design of applications and change management processes necessary to exploit the new technologies.

- IT investment and prioritization covers the whole decision-making process of IT investment. This includes prioritization of where IT investments should be focused and describes the procedures for IT project proposals, justification, approval and accountability.
The above theory suggests that in order to evaluate the IT governance practices on the organisation it is important to consider how key decisions are made.

The IT literature identifies three modes of IT governance (Sambamurthy and Zmud, 1999). These are:

- Centralised, where corporate management have the cross-organisational IT decision-making authority.
- Decentralised, where divisional management have IT decision-making authority for their systems, and,
- Hybrid or Federal, where corporate management have IT infrastructure decision-making authority for the entire organisation, and divisional management has authority for their applications and system development.

In their study on IT Governance in one page, Weill and Ross (2004a) found that:

- Top performing organisations on profit tended to be centralised in their approach to IT governance. Their strategies emphasise efficient operations often focusing on measures of business process cost and profitability. Key governance mechanism includes executive committee for decision making, centralised processes for architecture compliance and exceptions, enterprise-wide IT investment decision processes and formal post-implementation assessment of IT related projects.
Top performing organisations on growth were more focused on innovation and time to market. These firms measure success through growth in revenue and insist on local accountability. They require few governance mechanisms, often relying on investment process that identifies high priority strategic project and manages risk.

Organisations pursuing asset utilisation attempt to balance the contrast between governance for profitability and governance for revenue growth and innovation. These firms focus on using shared services to achieve either customer responsiveness or economies of scale – or both. Their IT principles emphasize sharing and reuse of process, system, technology, and data modules. Leaders on asset utilisation typically rely on duopolies and federal governance design. They introduce governance mechanisms to address the tension between enterprise wide and local control. Asset utilisation demands a hybrid approach to governance mixing elements of centralised and decentralised governance.

2.7. Effectiveness of IT governance

Effective governance demands that senior managers define enterprise performance objectives and actively design governance to facilitate desirable behaviours consistent with those objectives (Sambamurthy and Zmund, 1999). An enterprise governance performance can be assessed by evaluating the effectiveness of IT governance in delivering four objectives (Weill and Ross, 2004a):

- Cost of effective use of IT
The state of IT governance in the Top 20 IT spending companies

- Effective use of IT for asset utilisation
- Effective use of IT for growth
- Effective use of IT for business flexibility

2.8. Summary

The purpose of this chapter was to review literature relating to the state of IT governance. This chapter discussed IT Governance, its principles and models that assures that the organisation’s IT supports its goals and strategies.

The starting line for every governance process implementation is represented by establishing the objectives of the entire IT activities of the enterprise, making available an initial overview, a map aiding the future position identification. Generally, IT governance principal objectives intend to: align IT activities with an action plan of the enterprise in order to achieve a desired efficiency, use IT for development of the entity by exploiting the opportunities and maximizing the profit, use IT resources rationally, and manage efficiently the risks associated with IT.

The largest body of literature on IT governance is concerned with the locus of the IT decision-making authority within an organisation. In this view, IT governance is concerned with three issues:

- IT infrastructure management, which refers to decisions relating to the types of hardware and software platforms, network and data architectures used within the organisation and the corporate standards for procurement and deployment of its IT assets,
• IT use management, which refers to decisions relating to IT planning and priorities and to the routine provision of IT services, and

• IT project management, which requires both infrastructure and system skills to be used to develop and implement new systems.

Effective IT governance doesn’t happen accidentally. Firms must establish their need for synergy and autonomy, recognise the limitation of organisational structure, and thoughtfully design IT governance arrangement and specific mechanism that encourage desirable behaviours. While analysing the theory base, the obvious thing is the importance IT governance to organisations. The organisation need of formal IT governance is mandated by legislations such as draft King III report. From this theory it was possible to formulate research questions, which is discussed in the next chapter, and a model to analyse research findings as presented in Chapter 5.
Chapter 3: Research Questions

3. Introduction

Struwig and stead (2001) outlined a process for designing research based on the selection of a topic and investigation of the problem domain followed by the formulation of objectives or aims. The purpose of the research was to investigate the status of IT governance in the top 20 IT spending companies in South Africa. This research was built on Gomes’ (2007) findings on the state of IT governance in South Africa.

The assessment of the state of IT governance in the top 20 IT spending companies was based on three secondary objectives, focused on understanding IT governance practices implemented in South African companies to manage IT investments. The secondary objectives were derived from the primary objective and resulted in the development of three research questions.

3.1 Research Objectives

The secondary objectives were as follows:

- To understand the levels of IT governance maturity in top 20 IT spending companies in South Africa.

- To understand how IT governance practices are implemented.

- To understand the drivers of IT governance.
3.2. Research Questions

In order to achieve research objectives, the following research questions were asked.

- What are the levels of IT governance maturity in top 20 IT spending companies in South Africa?
- Which and how IT governance practices are applied in these organisations?
- What are the drivers of IT governance in the top 20 IT spending companies in South Africa?
Chapter 4: Research Methodology

4. Introduction

This chapter presents the research philosophy, approach, design and methods used to address the research problem as outlined in chapter 1. This research project sought to analyse and explain the state of IT governance in the top 20 IT spending companies, through quantitative methods using inductive logic based on existing theories.

4.1. Overview of research design

Zikmund (2003) referred to the usefulness of categorising research based on function arguing the nature of the problem would influence the choice of research method. The objective of this research project was to gain an understanding into the status of IT governance in the top 20 IT spending companies in South Africa, through the identification and gathering of empirical data (Zikmund, 2003). The acquisition of empirical data was to allow for descriptive research to gain an understanding of specific population, IT governance practices based on observable results.
4.1.1. Research Philosophy

For this study, selecting an overall research philosophy is the choice between two primary alternatives: between a positivist (quantitative) and a phenomenological (qualitative) philosophy (Hussey and Hussey, 1997). Given the research problem identified in Chapter 1, the research project followed positivist paradigm.

Table 3: Research Paradigms (Easterby-smith et al, 1991)

<table>
<thead>
<tr>
<th></th>
<th>Positivist Paradigm</th>
<th>Phenomenological Paradigm</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Basic Belief</strong></td>
<td>• The world is external and objective</td>
<td>• The world is socially constructed and subjective</td>
</tr>
<tr>
<td></td>
<td>• Observer is independent</td>
<td>• Observer is part of what is observed</td>
</tr>
<tr>
<td><strong>Researcher Should</strong></td>
<td>• Focus on facts</td>
<td>• Focus on meaning</td>
</tr>
<tr>
<td></td>
<td>• Look for causality and fundamental laws</td>
<td>• Try to understand what is happening</td>
</tr>
<tr>
<td></td>
<td>• Reduce phenomenon to simplest elements</td>
<td>• Look at the totality of each situation</td>
</tr>
<tr>
<td></td>
<td>• Formulate hypothesis and then test them</td>
<td>• Develop ideas from induction from data</td>
</tr>
<tr>
<td><strong>Preferred methods include</strong></td>
<td>• Operationalise concepts so they can be measured</td>
<td>• Using multiple methods to establish different views of phenomena</td>
</tr>
<tr>
<td></td>
<td>• Taking larger samples</td>
<td>• Small samples investigated in depth or over time</td>
</tr>
</tbody>
</table>

As indicated in Table 3, positivist approach is more objective and requires a higher number of samples that will produce specific and precise data with potentially low reliability.
4.1.2. Empirical Research

According to Hussey and Hussey (1997:10), four types of research purpose exist: exploratory, descriptive, analytical or predictive. Regardless of the purpose of the research, empirical evidence is required (Tobin, 2006). Hussey and Hussey (1997:10), define empirical evidence as data based on observation or experience. This research project was designed to take into account empirical research approaches as it uses field work.

Descriptive research was chosen. According to Leedy and Ormrod (2001:191), descriptive research is a type of a quantitative study that involves either identifying the characteristics of an observed phenomenon or exploring possible correlation among two or more phenomena. Descriptive research examines a situation as it is. It does not involve changing or modifying the situation under investigation, nor is it intended to detect cause-and-effect relationships. The research approach was inductive in nature, where the logical process of establishing a general proposition on the basis of observation of particular facts provided by the companies on their IT governance practices. The research design was therefore a quantitative research method.

This study employed quantitative methods with the aim of establishing, confirming, or validating relationship and to develop generalisation (Leedy and Ormrod, 2001) that contribute to IT governance theory. Descriptive research was used since it allowed the researcher to identify the characteristics of an observed phenomenon or explore possible correlation among two or more
The state of IT governance in the Top 20 IT spending companies

phenomena (Leedy and Ormrod, 2001:191). The major purpose of descriptive research is to describe characteristics of a population and helps to segment and target markets (Zikmund, 2003). Barbie (2005:229) stated that descriptive research examines a situation as it is; it does not involve changing or modifying the situation under investigation nor is intended to detect cause-and-effect relationship. The aim of this research was to examine companies’ IT governance as they are without determining the relationship between IT governance and organisational performance.

4.1.3. Data Sampling

A basic choice in formulating the approach to data sampling exists between probability sampling and non-probability sampling (Zikmund, 2003). Given the nature of this research problem outlined in Chapter 1, it was clear that non-probability data sampling methods would be appropriate for this research study. In non-probability sampling, the researcher has no way of forecasting or guaranteeing that each element of the population will be represented in the sample. Furthermore, some members of the population have little or no chance of being sampled (Leedy and Ormond, 2001).

Both Judgement and Snowball sampling techniques were used (Zikmund, 2009). Companies and individuals were selected based on pre-specific criteria i.e. top 20 IT spending and C-level positions. Leedy and Ormond (2001:219) used the term purposive sampling where units are chosen for a particular purpose, implying the use of judgement on the part of the researcher. Some C-level executives and IT governance specialists were difficult to locate or didn’t
have enough information to complete the survey and referred the researcher to relevant people within their organisations, the researcher collected contact details from other members of the target population. Snowball refers to the process of accumulation as each subject suggests other subjects (Barbie, 2005:190). Snowball and judgement sampling are types of non-probability sampling (Barbie, 2005:189).

The IT Governance Network, the South African organisation responsible for assisting clients with the implementation of IT governance using frameworks like COBIT and ITIL, provided a list of the top twenty IT spending companies in South Africa. Herewith list (see Table 4) of companies included in this study

<table>
<thead>
<tr>
<th>No</th>
<th>Company Name</th>
<th>Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Old Mutual Group</td>
<td>Financial</td>
</tr>
<tr>
<td>2.</td>
<td>Nedbank Group Limited</td>
<td>Financial</td>
</tr>
<tr>
<td>3.</td>
<td>First National Bank</td>
<td>Financial</td>
</tr>
<tr>
<td>4.</td>
<td>Investec Limited</td>
<td>Financial</td>
</tr>
<tr>
<td>5.</td>
<td>South African Revenue Services</td>
<td>Government</td>
</tr>
<tr>
<td>6.</td>
<td>State information Technology Agency</td>
<td>Government</td>
</tr>
<tr>
<td>7.</td>
<td>Eskom Holding</td>
<td>Utility</td>
</tr>
<tr>
<td>8.</td>
<td>SAB Miller</td>
<td>Oil and Petroleum</td>
</tr>
<tr>
<td>9.</td>
<td>SAB Miller</td>
<td>Beverages</td>
</tr>
<tr>
<td>10.</td>
<td>South African Social Security Agency</td>
<td>Government</td>
</tr>
<tr>
<td>11.</td>
<td>Vodacom Group</td>
<td>Telecommunication</td>
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<td>Telkom</td>
<td>Telecommunication</td>
</tr>
<tr>
<td>15</td>
<td>Department of Home Affairs</td>
<td>Government</td>
</tr>
<tr>
<td>16</td>
<td>South African Airways</td>
<td>Aviation</td>
</tr>
<tr>
<td>17</td>
<td>Absa</td>
<td>Financial</td>
</tr>
<tr>
<td>18</td>
<td>Erkhuruleni Municipality</td>
<td>Government</td>
</tr>
<tr>
<td>19</td>
<td>Pick ‘n Pay</td>
<td>Retail</td>
</tr>
<tr>
<td>20</td>
<td>Transnet</td>
<td>Government</td>
</tr>
</tbody>
</table>

### 4.1.4. Unit of analysis

The targeted population consisted of IT executive managers of South African organisations that had the highest IT spending. The unit of analysis was IT executives responsible for implementing IT governance within their respective organisations.

### 4.1.5. Data collection methods

Welman and Kruger (2001) state that once a research design has been decided upon, it is important to obtain research participants or unit of analysis thereafter consider which data collecting method is most appropriate in light of the research problem and the particular population in question. A variety of possible data collection methods were available under descriptive research. This included the use of questionnaire and interviews. In this study, online surveys (questionnaire) were used to collect data.
Regardless of the specific method used, surveys like other data collection methods, have special strength and weaknesses. Surveys are particularly useful in describing the characteristics of a larger population (Barbie, 2005), they make large sample feasible and they are flexible (Leedy and Ormond, 2001). Surveys require that an initial study design remains unchanged throughout (Barbie, 2005). Survey researches are generally weak on validity and strong on reliability (Barbie, 2005). A closed online survey was designed by the researcher. An email with the website link was sent to IT Executives requesting their participation. The surveys took a form of a self administered questionnaire (Zikmund, 2003: 221).

One of the research limitations identified by Gomes (2007) in his study was that:

- In his internet survey, most respondents were not C-level individuals and did not have a clear knowledge of the IT governance subjects
- Most C-level individual did not participate due to some other pressing matters of running the business.

In order to avoid the same challenges as Gomes (2007), the researcher obtained contact details of IT Executives responsible for IT Governance in the identified top 20 IT spending companies from IT Governance Network.
The questionnaire contained clear instructions and introductory comments about the purpose and expectation of the exercise. Respondents were asked to select an answer from the pre-populated list provided by the researcher. Appearance of negation in questionnaire was avoided as this paves the way for easy misinterpretations (Barbie, 2005).

4.1.6. Pretesting of questionnaire

No matter how careful the researcher designed questionnaire, there were bound to be some few errors. The mistakes included ambiguous questions, one that people could not answer. The researcher pre-tested the questionnaire with two experts in the field of IT governance, their feedback was used to improve the researcher questionnaire before it could be sent out to individuals (Barbie, 2005).

4.1.7. Data Analysis

Leedy and Ormond (2001) mentioned that data are of little or no value merely as data. The purpose of research was to seek the answer to a problem in the light of data relates to the problem. Although collecting data for study and organising it for inspection take care and precision, extracting meaning from the data was important (Barbie, 2005). The researcher collected, captured data on Microsoft Excel spreadsheet and analysed using both Microsoft Excel spreadsheet and NCSS statistical software.
In this research study, descriptive statistics was used to analyse data. Descriptive statistics is concerned with the description and summarisation of the data obtained for a unit of analysis (Welman and Kruger, 2001:208). Data was presented in the form of tables and graphical distribution (Barbie, 2005). Welman and Kruger (2001) suggests that in analysing and interpreting the results of the survey, comparisons of basic descriptive data should be conducted to make the results more meaningful. Without comparative data, the survey is of little or no use (Welman and Kruger, 2001). The following comparative data was applied in this research study:

- Comparison of different organisations in their application of different IT governance practices
- Comparisons of organisations in different sectors.

4.2. Research Limitations

The following major research limitations were identified:

- CIOs in companies surveyed were highly pressurised and access to them was difficult to obtain. Where access to these individuals was not possible, the second-in-charge was approached. This however, does not necessarily represent the views of the C-level position in those companies.
- Non response error (Zikmund, 2003) resulting from persons refusing to participate in the survey. The other concern was that CIOs did take the time to complete the survey due to other pressing issues or indifferences relating
to the subject of IT governance. This biased the survey since the population size is 20.

- Self selection bias, a situation where bias occurred is when CIOs feel strongly about the subject of IT governance responds in favour of their organisations

4.3. Ethical Considerations

The goal of ethics in research is to ensure that no one is harmed or suffers undesirable consequences from research activities. Welman and Kruger (2001:171) state that ethical considerations come into play at three stages of a research project, namely:

- When participants are recruited;
- During the intervention and or the measurement to which they are subjected;
- In the release of the results obtained

In this research project, researchers explained to the participants the nature of the study to be conducted and were given the choice to participate or not participate during the data collection stage. The process ensured that:

- The participant’s right to privacy is respected
- Anonymity and confidentiality is guaranteed
- The aim of the research was communicated to the informant
- Informed consent was achieved
4.4. Summary

In this chapter, the researcher has principally discussed the research design or strategy including data sampling, data collection methods, unit of analysis and data interpretation techniques. Research limitations and ethical considerations were also discussed in this chapter. Although collecting data for study is important, extracting meaning from data is also important and was discussed in this study. The researcher decided on population, chose a technique for sampling it and developed means of collecting the desired information.

In summary, the overall methodology was one based on positivist philosophy. It used non-empirical approaches. The study used quantitative methods and employed survey research as the primary research strategy. In the next chapter (chapter 5), the researcher will present non-empirical data gathered during the fieldwork phase of this research project.
Chapter 5: Results

5. Introduction

This chapter presents data collected during data collection phase of this project. The data gathering and analysis process is guided by three research questions identified in chapter 3, which also provide the basis for the overall structure for presentation of results. In this chapter the researcher uses descriptive statistics to summarise, describe and make a generalisation about data collected. Inferential statistics are also used to make an inferences or judgements which leads to understanding the state of IT governance in companies surveyed and to draw a conclusion.

The objective of the study is to investigate the status of IT governance in the companies that invest a significant sum of money in IT. The study looks at maturity level of IT Governance. Key players in IT governance and sponsors of IT governance are examined to determine whether the levels of maturity are influenced by these stakeholders. The section analyses the importance and benefits of IT in organisations surveyed. Risk management and governance framework adopted are examined to check how they support IT governance.

5.1. Result analysis considerations

There were a number of issues during results analysis which needs to be brought forward and considered when reviewing the results. Firstly, in terms of
company response rate, 20 companies were targeted and only 16 companies responded to this survey. A response rate of 80% was achieved. Secondly, the researcher contacted more than one individual per organisation, this includes CIOs, Executive Managers and/or IT Managers. Total number of responses expected was 40; however the researcher received 33 responses. A response rate of 82% was achieved.

Thirdly, response bias occurred when some respondents tend to answer in a certain direction to the point they consciously or unconsciously misrepresent the truth (Zikmund, 2003). The questionnaire was designed in such a way that respondents self assess their organisation’s IT practices. In this case, the researcher expected some degree of response biasness. To address this problem, the researcher increased the number of respondents per company surveyed. Lastly, the researcher used percentages and percentage distribution (descriptive statistics) to interpret data, percentage distribution is a frequency distribution organised into tables or graphs that summarises percentage values associated with particular values of a variable.

5.2. Profile of Participants of the research

Thirty-three individuals participated in surveys, representing 16 top IT spending companies. Response rate of 80% was achieved and 33 are statistically significant. According to Zikmund (2003), one can make an inference from the data collected. The table 5 shows companies that were surveyed and the number of participants from each company.
Table 5: List of companies and number of individuals participated in the study

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<tr>
<th>Companies</th>
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<tr>
<td>Eskom</td>
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<tr>
<td>First National Bank</td>
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<td>Investec</td>
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<tr>
<td>Nedbank</td>
<td>3</td>
</tr>
<tr>
<td>Old Mutual Plc</td>
<td>4</td>
</tr>
<tr>
<td>SA Post Office</td>
<td>1</td>
</tr>
<tr>
<td>Sasol Technology</td>
<td>3</td>
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<tr>
<td>SASSA</td>
<td>2</td>
</tr>
<tr>
<td>South African Breweries</td>
<td>1</td>
</tr>
<tr>
<td>South African Post Office</td>
<td>1</td>
</tr>
<tr>
<td>South African Revenue Service</td>
<td>2</td>
</tr>
<tr>
<td>Telkom South Africa</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total number of individuals participated</strong></td>
<td><strong>33</strong></td>
</tr>
</tbody>
</table>

5.3. Industry Participation

The top IT spending companies are mainly from sectors such as: IT/telecommunication, financial services, utilities, public sector, chemical and energy and manufacturing (see figure 12). The financial services sector is the highest with nearly 41% of respondents, the followed by public sector and utilities 19% and 13% respectively and IT/telecom with 9%. The sample is dominated by large organisations, 91% of them had turnover greater than R250 million and they all employed more 1000 employees. The average turnover of the entities is 240 with a standard deviation of 36.

There is limited difference in turnover between organisations surveyed. This dominance of larger businesses is expected in a survey that focuses on
organisations spending significant amount in IT and therefore confirms the overall quality of the sample.

![Company's industry or sector chart]

**Figure 12: Company's industry / sector**

5.4. **Respondents’ job functions**

Figure 13 shows that 55% of the respondents are IT managers directly involved with IT governance, 36% are executives responsible for areas such as IT strategy, architecture, security and risk management. Nine percent of the participants are CIOs. This shows that although championship for IT governance with the enterprise comes from C-levels, in daily practices IT governance is still very much an IT executive or senior management issue.
5.5. Levels of IT governance maturity

Organisations were asked to rate their organisations’ level of IT governance maturity and indicate the IT governance frameworks implemented in their organisations. According to Stephenson (2004) management has been mandated to reach their business objectives. For that reason, they must continually identify the activities to be performed, measure progress and determine how well the IT processes are performed. COBIT proposes the maturity model for IT governance, and it assumes the following values: non existence, initial, repeatable but intuitive, defined process, managed and measurable, and optimised.

Maturity level of IT governance in one-third of the organisation has reach stage where business goal, IT process and sophisticated target setting are well
understood in the organisation. Slightly more than one in five of the organisations have developed a defined process that oversee and manage IT governance activities. In one-fifth of the organisation the concept of IT governance does not exist formally and oversight is based mostly on management initiative and experience is handled on case by case basis.

Figure 14 shows that respondents are positive regarding the IT governance maturity of their organisations. Thirty-seven percent of IT governance processes are managed and measurable; this means that there is a full understanding of IT governance issues at all levels, supported by training. Three percent of the respondents states that their IT governance practices do not exist in their organisations, whilst 21% of the respondents states that their processes are defined, and other 21% believes that their organisation’s IT governance processes are repeatable.
Participates were asked to select multiple frameworks used in the organisations. It was clear that the IT framework used by more than two third of the organisation is a combination of both ITIL and CobIT with enhancement by ISO or internally developed framework. ITIL (79%) and COBIT (72%) are widely used frameworks, even though ITIL is mainly focused on service delivery, followed by ISO (33%) and internally developed frameworks (24%). COBIT is tied internally with internal solutions, which are often based on COBIT, ITIL and ISO 9000. With regards to IT governance maturity levels, COBIT users might be aware of their actual maturity due to COBIT’s well documented maturity models rather than guessing the maturity levels based on individual projects and initiatives within the organisation.
5.6. Drivers of IT governance

The purpose of IT governance is to direct IT endeavours; to ensure that IT’s performance meets the following objectives: realisation of the promised benefits, use of IT to enable the enterprise by exploring opportunities and maximising benefits, responsible use of IT resources.

To understand the importance of IT in the organisation, participants were asked to indicate the percentage amount of the organisation’s annual expense spent on IT. Thirty percent indicated that their organisations spend less than 10% on IT, 24% of respondents mentioned that their organisation spent only 10% of their annual expense, while 15% spent 20% of the annual expense on IT (see figure 15).

![Figure 15: Percentage of organisation's annual expense spent on IT (33 respondents)](image-url)
The investment in IT is a key indicator for understanding the importance of IT to an organisation. Majority of the population (70%) spent more than 10% of the annual expenses on IT. It was established that the annual turnover of companies that participated in the survey is around R250 million, which means that 10% of annual expenses is a significant amount of money. When further analysing the results of percentage amount of expenses spent on IT, it was noticeable that the sectors that have the highest expenditure are the financial services and public sectors (both with more that 30% spent on IT), followed by IT/Telecommunication sector.

Key champion for IT governance in organisation surveyed are CIOs. According to ITGI (2003), IT governance is the responsibility of the board of directors and executives. In companies surveyed, 72% of respondents indicated that the CIO is the champion of IT governance in their organisation, and 15% indicated that IT divisional executives are individuals responsible for IT governance. None of the respondents indicated that board of directors are responsible for IT governance in the organisations.

5.7. Effectiveness of IT governance

IT governance is used to deliver four objectives, namely, cost effective use of IT, effective use of IT for asset utilisation, effective use of IT for growth and effective use of IT business flexibility. Respondents were asked to rate the importance of different outcomes to their organisations. A scale of 1 to 5 was used to answer questions, 1 - important and 5 --very important. IT governance
has been given a score of 4 and 5 for all governance issues except for asset utilization. The effective use of IT asset utilisation seems to be problem in some of the organisations. The average score per issue is around 4 except for asset utilisation which is around 3.7. The stand deviation is approximately 0.9 for the first two issues and 1 for the last issues. There is a closer agreement among organisation regarding the importance of IT governance.

Managers appreciate the notion that in order to take IT governance seriously they need to measures for IT performance, this can be done by understanding the cost effective use of IT (See figure 16). Fifty-seven percent of the respondents indicated that cost effective use of IT as measure was very important in the organisation and it was used to measure IT performance.

![Cost effective use of IT](image)

*Figure 16: Cost Effective use of IT*
In terms of effective use of IT for asset utilisation as a measure, only 21% believes that the measure is important in their organisation (figure 17). While 48% of the population believes that effective use of IT for growth is an important measure in their organisation (figure 18). Figure 19 shows that 39% of respondents also believe that effective use of IT for flexibility is a very important measure of IT Performance.

Figure 17: Effective use of IT for asset utilisation

Effective use of IT for growth

Figure 18: Effective use of IT for Growth
Effective use of IT for flexibility

![Effective use of IT for flexibility](image)

**Figure 19: Effective use of IT for flexibility**

5.8. Implementation of IT governance practices

There are 5 focus areas of IT governance (ITGI, 2003), and the successful implementation on those areas is an indication of IT maturity in the organisation. This section will look at 5 focus areas of IT governance and determined how they are implemented in different organisations and sectors. Participants were asked to explain how different aspects of each focus areas were implemented in their respective organisations.

5.8.1. Strategic Alignment

When respondents were asked to describe how IT strategy formulation is organised in their organisations, 52% indicated that IT strategy is organised at
an overall corporate level. Twenty seven percent indicated that strategy formulation is organised within strategic business units (SBU) (see figure20).

Figure 20: How IT strategy formulation is organised? (33 responses)

It was also established that IT strategy formulation is organised at an overall corporate level in all sectors that participated in the survey.

In most organisations (55% of respondents), the role of the IT strategy committee (ITSC) meetings is to ensure that IT investment is aligned with business priorities. The 18% of total respondents mentioned that the role of IT strategy committee meetings is to determine the overall IT investment strategy, while 9% states that the role of the committee meeting in their organisations is to advise the board on the formulation of IT Strategy. In the financial services (57%) and chemicals and energy sector (67%), the role of ITSC is to ensure that IT investment is aligned with business priorities, followed by advising the board on the formulation of IT strategy. The manufacturing (100%) sector data
indicates that the role of ITSC is to determine overall IT Investment strategy. Thirty three percent of participants from the public sector indicated that ITSC does not exist in their organisation.

When respondents were asked to indicate who chairs their ITSC meetings, 76% indicated that the CIO/CTO chairs the committee meetings. The 18% of respondents indicated that heads of departments chairs the meetings, while chairman of the board (6%) chairs the ITSC meeting in some of the organisations (see figure 21).

The ITSC reports to the CEO/MD, this is according to the 37% of the respondents when asked this question, and 15% indicated that ITSC reports to the chairman of the board. The ITSC meets monthly (37%) and quarterly
(30%). In some public sectors organisation the ITSC never meets, this is according to the 33% of respondents.

5.8.2. Value Delivery

To be successful, enterprises need to be aware that different strategic contexts require different indicators of value. This means that it is important to establish the value measures in concert between the business and IT. It is important to note that the public sector has different value drivers than the private sector. Hence, the aim was to determine whether organisations have measures in place to measure value delivered.

The respondents were asked to explain how they manage the total cost of IT (TCIT), 64% indicated that the cost of IT is managed efficiently, 21% indicated that there are continual processes to manage cost of IT in their organisations, the cost of IT is managed effectively and the organisation is able to achieve optimal IT spending, while the other 15% indicated that the total cost of IT is not managed, however there is a plan in place to manage it. Looking at the data per sector, respondents from chemical and energy (100%), IT/Telecommunication (100%), and Manufacturing (100) indicated that that their organisation’s TCIT is managed effectively, followed by financial services sector (78%). Fifty five percent of respondents from public sector mentioned that TCIT is not managed; however there is a plan in place to manage it.
On the question of return on IT investment/assets (ROIT), 43% indicated that the return on IT Investment is measured effectively, 39% indicated that ROIT is not measured, however there is a plan in place to introduce measuring tools/matrix, and 18% indicated that there are continual processes to measure the ROIT in their organisations, this is managed effectively and the organisation is able to achieve optimal IT spending. Fifty five percents of respondents from the public sector indicated that ROIT is not measured in their organisation and there is a plan in place to introduce measuring tools.

Measures discussed above i.e. TCIT and ROIT must be covered in the IT balanced scorecard. The respondents were asked whether their organisations have IT a scorecard that covers value creation. Thirty four percent mentioned that they have an IT scorecard and the organisation’s scorecard has evolved into one that is focused on measures relevant to the enterprise’s overall business strategy. Twenty seven percent indicated that they also have an IT scorecard, and all aspects of the business are measured including (financial, customer, processes, and learning and growth), 18% indicated that they don’t have IT scorecard; however, there is a plan in place to implement one, while 3% indicated that they don’t need a scorecard (see figure 22).
5.8.3. Resource Management

A key to successful IT performance is the optimal investment, use and allocation of IT resources. When participants were asked whether their resource management initiatives includes the management of assets, contracts for outsourcing, and service levels agreements (SLA) (figure 23), 79% of the respondents mentioned that their resource management practices includes the management of assets, contacts, and SLAs. In manufacturing sector, 100% of the respondents indicated that their resource management practices only include the management of contract (outsourcing).
5.8.4. Risk Management

The universal need to demonstrate good enterprise governance to shareholders and customers is the increased risk management activities in large organisations. Respondents were asked to rate their organisation’s risk management practices using Likert scale: 1- very good and 5 – never.

According to figure 24, 34% of the population rated their organisations “fair” with regard to senior management ownership of the risk management process. 39% indicates rated their organisations “good” indicating that there is a clear communication of risk management policy to all staff members in their organisations. Other respondents (57%) felt that the communication of policies is not managed well.
Respondents rated their organisation’s framework for management of risk positively (see figure below), i.e. good (36%), very good (12%) and fair (39%).

![Framework for management of risk](chart)

**Figure 24: Framework for management of risk (33 responses)**

In terms of an organisational culture that supports well-thought risk taking and innovation, 51% of the respondents were not confident. Only, 24% were positive and whilst the other 24% was not positive. The management of risks is not embedded in the management processes and they are not consistently applied. 58% of the respondents agree with the statement, while 42% believes that risk practices are embedded in management processes (routines).

Forty-five percent of the population indicated that there is a close linkages of risk management to the achievement of business objectives, 33% of the respondents were not confident with this practice. Fifty one percent of the
population indicated that in their organisation, there is active monitoring and regular reviewing of risks.

5.8.5. Performance Management

The responsibility for measuring the performance of IT department as a whole lies in both IT department and business units; this is according to 55% of respondents surveyed. Twenty one percent indicate that it lies in the IT department of their organisations. According to 43% of the respondents, the role of the board in IT governance performance management in their organisations is to ensure that IT delivers on the promise of related strategies through clear expectations and measurements. While 30% states that the role of board is to develop realistic IT performance measurement plan, along with appropriate metrics.

The role of CEO in IT governance performance management in organisations surveyed is to ensure that IT delivers on the promise of related strategies through clear expectations and measurements; this is according to 58% of respondents. According to 49% of the respondents, the role of CIO in IT governance performance management is to ensure that IT delivers on the promise of related strategies through clear expectations and measurements. This indicates that roles and responsibilities with regards to IT governance performance management are not clearly defined and understood by senior management.
When the respondents were asked select methods (more than one methods) used to measure the value of their organisation’s IT project and investment, 32% use the return on investment, followed by payback period (23%), and the net present value (20%).

![Methods to measure the value of IT projects](image)

Figure 25: methods to measure the value of IT projects

5.9. Summary

This concludes the presentation of data gathered during the data collection phase. The data gathered presented an opportunity to gain a deeper insight into the state of IT governance in the top 20 IT spending companies. The data was collected through the use of online survey.
This section presented results which contributed towards achieving the primary objective. The chapter was arranged according to three secondary research objectives, namely, to understand the levels of IT governance maturity in the top 20 IT spending companies, the drivers of IT governance and the implementation of IT governance practices. In terms of IT governance practices implemented the chapter looked at strategy alignment, value delivery, performance management, risk management and resource management.

Descriptive statistics were used to summarise, describe and make generalisation, while inferential statistics were used to make an inference. Issues to be considered during data analysis were highlighted in the beginning of this chapter. In this study, a response rate of 80% was achieved and the researcher was able to make an inference from data collected. The researcher used comparative data to compare different practices in different organisations.

As a result of data gathered, it is possible to conduct an analysis of findings in the next chapter. Once this analysis has been completed conclusion will be drawn and the summary of results will be presented.
Chapter 6: Interpretation of results

6. Introduction

In this chapter, the research results are discussed as presented in the previous chapter. The results are discussed in terms of secondary research objectives, namely, to understand the levels of IT governance, implementation of IT governance practices, and to understand the drivers of IT governance. The main aim of this chapter is to show depth of insight into the state of IT governance in the top 20 IT spending companies.

6.1. Level of IT governance maturity

The IT governance capability maturity model (CMM) was used to understand levels of general IT governance practices in the top 20 IT spending organisations. The maturity model is a way of measuring how well matured management processes are, and the appropriate maturity level will be influenced by the enterprise business objectives, the operating environment and industry practices (ITGI, 2007). The capability maturity level of an organisation can be rated from non-existent (0) to optimised (5).

The researcher has established that it is important for companies to determine their desired maturity levels in advance based on their business priorities and level of IT investment. None of the organisations (0% of respondents) indicated that their IT governance maturity level is at the optimised level. This implies
that in all the Top 20 IT spending companies, the IT governance practices have not developed into a sophisticated approach using effective and efficient governance techniques. There is no true transparency of IT activities, and the board is not in control of the IT strategy (CobIT, 2007).

The findings also suggest that IT activities have not been optimally directed toward real business priorities, the value being delivered to the enterprise cannot be measured and steps are not taken on a timely basis to correct significant deviations or problems. Through the findings, it is also established that the practice of continuous improvement of the IT capability is not embedded in the culture of the organisations, this includes regular external benchmarking and independent audits providing assurance to stakeholders.

Thirty-seven percent of organisations’ IT governance processes are managed and measurable (maturity level 4). This implies that very few Top IT spending companies have adequate performance management metrics developed. The measurements must indicate the measuring of the relationships between outcome goals in business terms, and IT process improvement. Real results must be communicated to management in the form of a balanced scorecard (ITGI, 2007).

The results also indicates that in these companies, the enterprise’s management team is working together for the common goal of maximizing IT
value delivery and managing IT-related risks. There are regular assessments of IT capabilities on completed projects that have delivered real improvements to company’s performance. Fifty five percent of respondents from the public sector indicated that their organisation’s IT governance maturity level are at initial level (level 1), this means that in these organisations, there should be realisation that more formalized oversight of IT is required and it needs to be a shared management responsibility requiring the support of top management.

The awareness and usage of the IT governance framework can be used as an indicator for IT governance maturity in the organisations. According to Buckby et al (2009), there are several frameworks designed to provide guidance on the implementation and management of IT governance. ITIL and CobIT are among them. These frameworks aims to assist in the delivery of high quality IT services through the dissemination of best practice approaches. These frameworks incorporate extensive management procedures that should support organisations in achieving quality and value from IT operations. The CobIT Framework is used to assess the effectiveness of organisational IT governance processes, it also assists organisations to implement a detailed program of IT governance structures.

In the organisations surveyed, ITIL (79%) and COBIT (72%) are widely used frameworks. This brings a contradiction into the analysis since IT frameworks are supposed to provide resources which guide organisations to implement aspects of IT governance focus areas, thereby improving the maturity levels of
organisations with regards to IT governance. It is disconcerting that although organisations in the public sector has implemented all two frameworks, the IT governance maturity levels are still low.

6.2. Implementation of IT governance practices

The increased dependence of IT, as established in Chapter 5, suggests that companies should implement formal IT governance practices. The successful implementation of ITGI focus areas are an indication of IT governance maturity. The researcher has adopted the (De Haes and Van Grembergen, 2004) framework to present the findings in terms of five focus areas (ITGI, 2003)

Figure 26: Adopted De Haes and Van Graemburgen (2004) framework
6.2.1. Strategic alignment

For any enterprise to achieve long term sustainable success, it is essential that all employees in all structures within the organisation of the enterprise fully understand corporate objectives and work together in a controlled and coordinated way to ensure that those objectives are met.

In today’s world of international competitiveness, high stakeholder expectation, increasing regulation and continuous change, it becomes even more essential that proper alignment be ensured amongst all functions of the enterprise (ITGI, 2005). The alignment of IT with the overall strategy of the enterprise does not happen by accident. It requires full and active involvement from all levels and activities with the enterprise. Proper governance over the achievement of IT alignment requires leadership and commitment from the highest levels of the enterprise (ITGI, 2003). In this study, the researcher established that in the top 20 IT spending companies, IT strategy formulation is organised at the corporate level. This is according to 52% of the respondents, and 27% stated that the strategy formulation is organised within strategic business units.

This is encouraging since in practice, business strategy is formulated to some extent at all levels of a business. IT strategy formulation remains the domain of the CEO and board, but implementation of the strategy involves other senior business management. It is important that they should be involved in the strategy setting, partly because of the informed input that they can provide but also ensure leadership and ownership during the implementation.
Every business and non profit organisation needs to develop an understanding, shared at the board level and then cascaded throughout the organisation, of the key processes that contribute to business success and, crucially, the importance that IT has these processes (ITGI, 2005a).

The role of ITSC in strategic alignment is to assist and advise the board on the formulation of IT strategy. The strategy committee is seen as comprising primarily board directors, including non executives, with CIO acting as a full or an ex officio member. The important matter is to ensure that all significant lines of business are represented at the highest levels and this responsibility is not delegated downwards. Ideally, the CEO, or at least a very senior director, should chair the committee with IT being represented by the CIO or CTO.

According to the findings, the role of ITSC meetings in organisations surveyed (55% of respondents), ensure that IT investment is aligned with business priorities. The 18% of total respondents mentioned that the role of the IT strategy committee meetings is to determine the overall IT investment strategy, whilst 9% states that the role of the committee meeting in their organisations is to advise the board on the formulation of IT Strategy.

In the financial services (57%) and chemicals and energy sector (67%), the role of ITSC is to ensure that IT investment is aligned with business priorities,
followed by advising the board on the formulation of IT strategy. The Manufacturing (100%) sector results indicate that the role of ITSC is to determine overall IT Investment strategy. Thirty three of participants from the public sector indicated that ITSC does not exist in their organisation.

It is clear that the role of ITSC is not clearly understood in most of the organisations; only 9% of the respondents understand the role of ITSC. Public sector organisations do not have structures in place to influence the formulation of IT strategy, even though they are amongst the top 20 IT spending companies. With regards to the question of who chairs the ITSC meetings, the CIO/CTO (78%) and heads of department (18%) chairs the meetings. Only 6% indicated that chairman of the board chairs ITSC meeting. This creates a great concern, according to ITGI (2005a), the CEO, or at least a very senior director, should chair the committee with IT being represented by the CIO or CTO.

In terms of strategic alignment in companies surveyed, it appears that companies addressed this focus area through processes such as strategic IS planning and the adoption and implementation of standards such as ITIL and COBIT. These practices and frameworks help in the attainment of business objectives. Structures like steering committees are used to involve business decision makers in strategic level IT decision making. This growing interaction between business and IT is helping to build a shared understanding between business and IT on key issues (Bhattacharjya and Chang, 2008). This is an
important relational mechanism in the De Haes and Van Grembergen framework (2004).

This research also shows that, although operational departments are included, this representation is not always at the departmental head level, often delegated to lower managers. This can have the consequences of the committee becoming more of a user group than a strategy formulation body. Most interesting, the CIO is actively involved (78%), this is very encouraging.

Notwithstanding the representation issue, ITSC should be seen to be at the same level as the audit or remuneration committee. It is unlikely that the roles of these latter committees would be delegated to the lower levels that seem to apply to the IT strategy committee (ITGI, 2005). Perhaps this again reflects real alignment issues, as IT strategy may be seen to be less important than audit or remuneration committee.

On the negative side, for few companies, the research indicates that reporting lines of the ITSC have the potential to be effective, as only 37% indicates that ITSC reports to the CEO. Only 15% indicated that ITSC reports to the chairman of the board. Generally, a meeting frequency of quarterly would be deemed most appropriate (ITGI, 2003). Strategy alignment practices in the Top IT spending companies are well implemented in organisations surveyed.
6.2.2. Value Delivery

To maximise the return on IT investments, techniques such as preparation of formalised, consistent business case, use of hurdle rates, attention to portfolio management; and application of metrics such as internal rate of return, net present value and payback period can be helpful. Ensuring that value is obtained from investment in IT is an essential component of IT governance. It involves selecting investment wisely and managing them throughout their life cycle. (ITGI, 2005b)

The respondents were asked to explain how they manage the total cost of IT (TCIT). It is encouraging that the cost of IT is managed efficiently (64%), while in other organisations there are continual processes to manage the cost of IT in their organisations, the cost of IT is managed effectively and the organisation is able to achieve optimal IT spending (21%), only 15% indicated that the total cost of IT is not managed, however there is a plan in place to manage it.

This shows that companies understand the importance of measuring the value of IT investment and they are actually measuring IT value delivery. To be successful, enterprises need to be aware that different strategic contexts require different indicators of value. This is important to establish the value measures in a collaborative manner between the business and IT. Fifty five percent of respondents from the public sector or government owned institutions mentioned that TCIT is not managed. However, there is a plan in place to
manage it. Most of the public sector organisations don’t understand the value of their IT Investment, and these organisations spend significant amounts of money on IT.

Government owned organisations are increasingly aware of the benefits that IT brings to their organisations, and are increasingly investing in this area. However, it is important that appropriate controls are put in place to ensure that the value IT brings are in proportion to the sums invested in it. Harris and Critchley (2008) state that when public money is being spent on IT, public scrutiny will focus heavily on any undertaking that is thought to be costly or inefficient.

While TCIT is managed well in most organisations, the ROIT is not understood. Only 43% indicated that the return on IT Investment is measured effectively, 39% indicated that ROIT is not measured, however there is a plan in place to introduce measuring tools/matrix, and 18% indicated that there are continual processes to measure the ROIT in their organisations, this is managed effectively and the organisation is able to achieve optimal IT spending. Fifty five percents of respondents from the public sector indicated that ROIT is not measured in their organisation and there is a plan in place to introduce measuring tools.
It is recommended that the public sector introduces mechanisms to measure value as well as the IT balanced scorecard. It is also should be mentioned that the public sector has different value drivers than the private sectors hence it was difficult to indicate how value is measured in their organisations. It is important to emphasise that no investment, whether IT related or not should be undertaken without full knowledge of the expected cost and anticipated returns.

### 6.2.3. Resource Management

According to ITGI (2005c), IT assets are complex to manage and continually change due to the nature of technology and changing business requirements. Effective management of the lifecycle of software licences, service contracts and permanent and contracted human resources is a critical success factor not only for optimising the IT cost base, but also managing changes, minimising service incidents and ensuring reliable quality of service.

In line with the above, it is encouraging that most organisations have systems to manage their resources. When participants were asked whether their resource management initiatives includes the management of assets, contracts for outsourcing, and service levels agreements (SLA), 79% of the respondents answered in the affirmative. In the manufacturing sector, 100% of the respondents indicated that their resource management practices only include the management of contracts (outsourcing).
From the data presented above it is clear that the required level of governance is extended into relationships with service providers when service provision is outsourced. Governance of outsourcing is an active process that the client and service provider must adopt to provide common, consistent and effective approach that identifies the necessary information, relationships, controls and exchange among many stakeholders across both parties. (Felton et al, 2002). As a strategic resource, outsourcing must be governed accordingly. This is not just about purchasing but effective management and ensuring that both parties benefit.

6.2.4. Risk Management

The management of risk is a cornerstone of IT governance, ensuring that the strategic objectives of the business are not jeopardised by IT failures (ITGI, 2005d). Organisations surveyed demonstrated an increasing interest in and adoption of best practices and standards for IT governance such as CobIT framework, ISO 17799 for security and ITIL for service delivery. As these practices are adopted, it is reasonable to expect that risk assessment will increasingly be performed against them, combined with the assessment of business impact and likelihood.

The researcher asked surveyed IT executives how well they think their organisation apply risk management practices. Only about a quarter thinks that their organisations address key risk management practices very well. Thirty-
nine percent of the population rated their organisation “fair” with regards to senior management individual ownership of the risk management process. Owning IT risk and giving direction for managing key risks are fundamental aspects of IT governance. Absence of top management responsibility and accountability for risk management can result in serious risk being ignored, potentially misguided actions and even waste of costly investments (ITGI, 2005d).

It is encouraging that 45% of IT executive’s surveyed state that there are good close linkages of risk management to the achievement of business objectives, and, 51% of the population indicated that in their organisation there is active monitoring and regular reviewing of risks.

It is recommended that the board reviews the risk management approach for most important IT-related risk on a regular basis, at least annually. Boards should be made aware of any significant unmitigated IT risks. IT management must implement a proper risk management framework, and insist that risk management be embedded in the operation of the enterprise.

6.2.5. Performance Management

Measuring IT performance should be a key concern of business and IT executives as it demonstrates the effectiveness and added business value of IT. It is encouraging that in the top 20 IT spending companies, the responsibility for
measuring the performance of the IT department as a whole lies in both IT department and business units, this is according to 55% of respondents surveyed. Twenty one percent indicate that it lies in the IT department of their organisations. ITGI (2005d) states that it is the co-responsibility of business and IT to measure IT delivery.

It is the responsibility of the board and executive management to define and monitor performance measures that assess the business value of IT. Clear roles and responsibilities were discussed in Chapter 2. Only few organisations (43% of the respondents) understand the role of the board in IT governance performance management, they states that the board ensures that IT delivers on the promise of related strategies through clear expectations and measurements. While 30% states that the role of board is to develop realistic IT performance measurement plans, along with appropriate metrics. This unfortunately is the role of the CIO.

According to ITGI (2005a) the CEO is responsible for ensuring a strong link between business objectives and performance measures. It is the responsibility of the CEO to develop appropriate incentive scheme to drive adherence to the performance measures. In organisations surveyed, 58% of respondents confirmed that the role of CEO in IT governance performance management is to ensure that IT delivers on the promise of related strategies through clear expectations and measurements, while 49 % of the respondents stated that the role of CIO in IT governance performance management is to ensure that IT
delivers on the promise of related strategies through clear expectations and measurements. It is disconcerting that roles and responsibilities with regards to IT governance performance management are not clearly defined and understood by senior management.

In terms of Performance Measurement Techniques for IT projects and Investments, it is important to understand that IT governance is about creating value, and creating value through the use of IT depends on managing the implementation of IT projects (ITGI, 2005). An investment represents the transformation of costs into financial benefits through the activities of the business. Investment appraisal techniques are designed to compare two sets of numbers for costs and financial benefits. Investment appraisal techniques determine a return on investment (ROI) which summarises a project’s net financial impact, indicates whether a project is worthwhile and allows it to be compared to other projects and ranked. The four principal techniques used in practice are: payback period; internal rate of return; net present value; and residual income.

ROI and Payback period are used primarily as measurement techniques for projects and investments. When the respondents were asked to select methods (more than one method) used to measure the value of their organisation’s IT project and investment, they indicated that they use financial oriented techniques such as ROI (32%), followed by payback period (23%), and
the net present value (20%). On the other hand BSC is used only by 15% of the respondents. BSC incorporates financial and non financial domains.

It is clear that companies use some metrics to measure performance of IT projects. A measurement regime helps to build a common understanding of investment opportunities and builds confidence across a business that it is spending resources wisely. It also provides a focus and discipline for management and, by building organisational commitment; it increases the likelihood of earning good returns. However, while measurement is important, it is not an end in itself. What ultimately matters is the return a project achieves.

6.3. Drivers of IT governance

Benson and Bugnitz (2009) define governance as the management practice by which IT and the business, together, decide where to invest IT resources, determine how to track performance, and establish the principles on which IT is managed. In effect IT governance is about making choices about IT spend. Gomes (2007) states that the drivers of governance initiatives provide the motivation for the necessary investment of resources to provide IT governance initiatives with the ability to ensure that IT delivers the expected return on investment.

The importance of IT can be measured by the amount of money the organisation is willing to invest in order to improve their operations. Top IT
spending organisations’ investment in IT varies, majority of the organisations (70%) spent more than 10% of the annual expenses on IT. The annual turnover of companies participated in this survey is more than R250 million, which means that 10% of annual expenses is a very significant amount. It is also understood that due to the financial crises, most companies have reduced their spending in the last two years. It is assumed that companies might have been spending far more than 10% on IT.

When further analysing the results of percentage of IT spend, it was noticeable that the sectors that have the highest expenditure are the financial services and public sector. In the financial sector, IT generates huge efficiency advantages; IT plays a significant role in this sector as a competitive factor – a necessary enabler without which organisations cannot simply deliver financial services. The main driver for IT governance is to create value (Benson and Bugnitz, 2009).

In terms of the effectiveness of IT governance, the researcher established that IT governance is used to deliver four objectives, namely, cost effective use of IT, effective use of IT for asset utilisation, use of IT for growth and use of IT business flexibility. Managers use IT governance to measure and understand the cost effective use of IT. It is encouraging that 57% of the respondents understand that cost effective use of IT is an important measure of IT performance. There can be no getting away that cost effective IT is a challenge for all managers.
However, few business executives indicated that they want IT to help more in business growth, flexibility and asset utilisation. In terms of effective use of IT for asset utilisation as a measure, only 21% believes that the measure is important in their organisation. While 48% of the population believes that effective use of IT for growth is an important measure in their organisation. 39% of respondents also believe that effective use of IT for flexibility is a very important measure for IT Performance.

6.4. Summary

This chapter discussed the results based on three secondary research objectives. The researcher used insight gained in Chapter 2 to analyse results. Overall, the analysis conducted in this chapter shows the following:

- The levels of IT governance maturity are unsatisfactory or inadequate.
- Strategy alignment practices in the Top 20 IT spending companies are not well implemented.
- In terms of value delivery, companies understands the value of measuring IT value, value delivery practices are implemented sufficiently in private sector companies and not well implemented in state-owned organisations.
- Resource management practices are well implemented.
- The implementation of Risk management practices are not adequate
In general, performance management practices are also not well implemented.

The study also found that the specific practices differ slightly, but the traditional practices are largely used to some extent by everyone. The research identified a number of challenges faced in implementation of those focus areas and recommendations were made. Having completed that analysis, the next chapter will be devoted to some final conclusions, recommended actions and possible areas for future research.
Chapter 7: Conclusion

7. Introduction
This chapter highlights the main findings of the research, pulling the results together into a cohesive set of findings. It also makes recommendations to stakeholders based on the findings and gives recommendations for future research. This is study aimed to evaluate the state of IT governance in the top 20 IT spending companies in South Africa. IT governance is increasingly becoming a big focus area in South Africa; therefore the results and recommendations of this research are important and contribute to the IT governance knowledgebase. In this chapter the researcher presents findings according to the three secondary research objectives.

7.2. Significant Findings
The primary research objective is to assess the state of IT governance in the top 20 IT spending companies in South Africa. The three research questions that guided this study have been generated from the primary research objective, and are discussed in detail in this section.

7.2.1. Research Objective 1: Levels of IT governance maturity findings
The study found that the levels of IT governance maturity are unsatisfactory. In this study it was established that:
- Only few companies, about a quarter, have matured levels of IT governance. In these companies, IT governance processes are managed and measured.

- Most companies do not measure the levels of IT governance maturity.

- Most companies use ITIL and CobIT frameworks for implementing governance, however the levels of IT governance maturities in some companies, especially government owned organisations, are still low.

Based on these findings, it is recommended that:

- Companies establish their desired IT maturity level since this is a business decision not an industry decision, however, considering the significant investment in IT, there should be mechanisms in place that ensure that there is a true transparency of IT activities, and they are directed towards real business priorities. The value of IT must be measures and continuous improvements are embedded in the culture of the organisation.

- Companies must continuously assess their IT governance maturity levels. IT maturity assessment is a continuous process. Regular benchmarking and independent audits are important since they provide positive assurance to stakeholders.

- Companies uses optimally IT governance frameworks to improve the maturity levels of their IT governance. CobIT can assist organisations to implement a detailed program of IT governance structures.
7.2.2. Research Objective 2: IT governance practices findings

In terms of assessing the effective implementation of IT governance practices the Top 20 IT spending companies, the research focuses on IT governance focus areas namely; strategic alignment, value delivery, risk management, resource management and performance, were assessed.

Strategic alignment practices findings

In terms of strategic alignment, the researcher has established that:

- Strategy alignment practices in the Top 20 IT spending companies are well implemented, with the exception of government owned organisations.

- Although it is not clear whether in terms of strategy alignment, companies are relying on IT for the execution of the business strategy or not, based on the amount invested IT, it is critical that IT play a role in supporting and enabling enterprise goals.

- The role of ITSC is not clearly understood in most companies. In government owned organisations, ITSC does not exist.

- In most organisations, neither board members nor CEO chairs the ITSC meetings. These meetings are chaired by the CIO.
Based on the above findings, it is recommended that

- Companies recognise that IT strategy is the responsibility of the board, and the role of ITSC is to assist and advice the board on the formulation of IT strategy.

- Government owned organisations must implement the ITSC. This is a very important structure in organisations that spend significant amount of money in IT.

- Either the CEO or board member chairs the ITSC with IT being represented by CIO. This will ensure that business decision makers are involved in IT strategic IT decision making.

- ITSC must be seen to be at the same level as audit or remuneration committee, since it is important to the success of the organisation.

**Value Delivery practices findings**

The researcher established that value delivery practices are implemented sufficiently in private sector companies and not well implemented in state-owned organisations:

- TCIT is managed efficiently in most private companies; this shows these companies understand the importance of measuring the value of IT investments.
State owned organisations do not measure TCIT or understand the value of their IT investment. TCIT is not well managed in these organisations; however, there are plans in place to do so in the future.

While TCIT is managed well in private companies, the ROIT is not well understood and managed efficiently.

It is therefore recommended that:

- Government organisations implement appropriate controls to ensure that the rewards that IT brings are in proportion to the sums invested in IT.
- All companies must measure ROIT; no investment should be undertaken without full knowledge of the expected costs and anticipated returns.

**Resource Management practices findings**

Resource management practices are well implemented. It was established that most of the organisations have systems in place to manage their resources. The study also found that the required level of governance is extended to service providers where service provision is outsourced.

**Risk Management practices findings**

The implementation of Risk management practices is not adequate; and the findings are as follow:
There is a lack of senior management individual ownership of the risk management processes.

The board is not involved in ensuring effective IT risk management.

Organisational members are educated in IT risk management and there is a high level of awareness regarding this subject.

In terms of risk management, the recommendations are as follow:

- IT risk management should be the responsibility of the board. The board must be aware of the significant unmitigated IT risks in the organisation.

- In all companies, senior managers must implement a proper risk management framework and insist that risk management practices are embedded in the operations of the enterprise.

**Performance Management practices findings**

In general, performance management practices are not well implemented. It is established that:

- In most organisations, the responsibility for measuring performance of the IT department as a whole lies in both IT department and business units.

- Few organisations understands the role of the board, CEO and CIO in IT performance management.

- The roles and responsibilities pertaining to IT performance management are not clearly defined and understood by senior management.
• The IT Balance scorecard is not well implemented in most organisations.

Based on the above, it is therefore recommended that:

• Management should be aware that IT performance must be assessed on an ongoing basis against the agreed-upon outcomes of the organisation

• Companies implement investment techniques to measure IT performance in financial terms

• IT Balance scorecards should be implemented to measure non-financial domains, measurement regimes helps build common understanding of investment opportunities and builds confidence across a business that is spending resources wisely.

7.2.3. Research Objective 3: Drivers of IT governance findings

The findings regarding the drivers of IT governance concur with those of Gomes' (2007), which states that South African organisations understands the advantages provided by IT governance as a mechanism for driving value throughout the business. Gomes (2007) found that there is also inconsistence focus on aspects of IT governance especially financial aspects. This study has established that

• IT plays a significant role in the top 20 IT spending companies; IT is seen as a production factor and service enabler.
The cost effective use of IT is the main driver of IT governance. Issues such as compliance to King III, using IT for growth, asset utilisation and flexibilities are not identified as drivers of IT governance.

To address the above, it is recommended that:

- Based on the significant investment in IT, IT should also be used for business growth, flexibility and asset utilisation.

### 7.3. Primary research objective revisited

The primary research objective is to understand the state of IT governance in the Top 20 IT spending companies. In order to answer the primary research objectives the outcome of the research questions will be evaluated in Table 6.

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the maturity level of IT governance?</td>
<td>The levels of IT governance maturity are unsatisfactory</td>
</tr>
<tr>
<td>Which IT governance best practices are applied?</td>
<td>Strategic alignment practices are well implemented</td>
</tr>
<tr>
<td></td>
<td>Value delivery practices are implemented sufficiently in private sectors and not well implemented in public sectors</td>
</tr>
<tr>
<td></td>
<td>Resource management practices are well implemented</td>
</tr>
<tr>
<td></td>
<td>Risk management practices are not well implemented</td>
</tr>
<tr>
<td></td>
<td>Performance management practices are also not well implemented</td>
</tr>
<tr>
<td></td>
<td>In general, the IT governance best practices are not well implemented.</td>
</tr>
<tr>
<td>What are the drivers of IT</td>
<td>There is inconsistent focus on aspects of IT</td>
</tr>
</tbody>
</table>
Table 6 shows that IT governance in the top 20 IT spending companies is still lacking behind, the main reasons behind this outcome is due to:

- the lack of IT strategy decisions required to ensure that IT is optimally supports and enables the business, and provide a holistic context and framework for all IT actions and initiatives and lastly, to ensure the longer-term positioning of the organisation for success.

- the lack of periodic changes to the IT governance arrangements of the organisation. Changes to the IT governance framework may also be necessitated by new regulations, changes to the corporate governance framework, industry or market changes, or changes to the business strategy, and

- the lack of the monitoring of IT investment outcomes and realisation of benefits.

It is therefore recommended that:

- The board controls IT strategy and the approval of the IT strategy; ensuring that there is sufficient alignment with the business strategy and that it sets the right direction for IT within the organisation.
• Companies must establish and implement IT governance structures (e.g. IT Steering Committee); and clearly defines the roles and responsibilities of these committees.

• Companies must continue to manage the IT function more effectively, this includes the IT service to be delivered to the business, risk and quality management, the implementation and management of IT processes and procedures, the financial management of IT, and human resource development and management.

With the current IT governance status, companies will face hurdles in terms of complying with King III requirements; King III requires that:

• management be responsible for the implementation of all the structures, processes and mechanisms to execute the IT governance framework.

• the board ensures an IT internal control framework is adopted and implemented by management.

• the board provides the required leadership and direction to ensure that the company’s IT achieves, sustains and enhances the company’s strategic objectives.

• the board ensures the implementation of IT frameworks, policies, procedures and standards that minimise IT risk, deliver value, ensure business continuity and assist the company to manage its IT resources efficiently and cost effectively.

• IT management must be aware of the maturity levels of governance currently in place.
7.4. The limitations of the research

Number of research limitations and issues were identified during the research. Firstly, the results of the survey are underpinned by various challenges particularly the potential subjectivity of maturity assessment. The question on maturity level was of self assessment in nature, where respondents asked were to evaluate their own IT governance maturity levels. This allowed biasness and to some degree most IT executive responded without proper knowledge of IT governance maturities. Most importantly organisation use different measurement criteria to assess the level of IT governance maturity, this was also identified in the literature review (Chapter 2).

Secondly, the method used to collect data was not appropriate to a certain degree, a face to face semi-structure interview would be proper for this type of study as it allows the researcher to get more insight into different practices by probing more questions.

Lastly, new IT governance issues such as the implementation of Green IT in organisations were not assessed in this paper. Green IT will be a big issue going forward in terms of IT governance.
7.4. Suggestions for Future Research

The results presented clearly shows that the IT governance in South African companies is not matured or taken seriously. This is also supported by Gomes (2007) findings. More and more companies inject money into IT operation but there aren’t mechanisms to ensure the accountability for that IT investment, hence King III made in compulsory for organisation to account on IT investment. With this in mind the future research must focus on understanding reasons that affect the maturity level of IT governance in South African organisations.

Some insights into IT governance practices in the top 20 IT spending companies have been obtained from this study; the researcher intends to conduct a longitudinal study in order to gain a better understanding of the business benefits of formal IT governance practices in the top 20 IT spending companies in South Africa.

7.5. Summary

The chapter analysed findings with regard to the state of IT governance in the top 20 IT spending companies. In this chapter, the researcher identified significant findings based research objectives and made recommendations for each objectives.

In this study it was established that companies spend significant amount of money and there are limited mechanisms to ensure effective governance IT
investments. There is also lack of IT strategy decisions required to ensure that IT is optimally supports and enables the business, periodic changes to the IT governance arrangements of the organisation, and the lack of the monitoring of IT investment outcomes and realisation of benefits.

The chapter concluded by showing the depth of insight into the state of IT governance in the Top IT spending companies, which is very unsatisfactory. Recommendations have been made to stakeholders. In this chapter, number of research limitations has been identified and the researcher has suggested areas for future research.
8. References


ITGI. (2003). Board Briefing on IT governance. Rolling Meadow, USA.


ITGI. (2005a). IT Alignment: Who is in Charge? Rolling Meadows, USA.

ITGI. (2005b). Optimising Value creation from IT Investments. Rolling Meadows, US.


Annexure A: Online Questionnaire

Dear Sir/Madam

I am a Master of Business Administration (MBA) final year student at the Gordon Institute of Business Science, University of Pretoria. I am presently engaged in a research project entitled “The state of IT governance in the top 20 IT spending companies in South Africa”, under the supervision of Dr Peter Tobin.

The objective of the study is to investigate the status of IT governance in the companies that invest a significant sum of money in IT. In order to complete this study, I need to conduct either survey or interviews of approximately 20 minutes. Please note that:

- Any information obtained from the surveys and interview will be used exclusively for the purposes of the research.
- All information will be treated with strict confidentiality and your name will not be reflected in the dissertation
- You are under no financial obligation or commitment
- Interviews are close-ended and will not be tape recorded or transcribed

The direct benefit to you participating in this study is that you will have the opportunity to review your IT governance practises and benchmark yourself with other companies.

A summary of the research finding will be made available to you on request.

I would like to thank you advance for choosing to participate in my Master’s research study. Herewith please find research questionnaire.

Should you wish to contact the researcher, you may do so at the following address:

Email: mmakomav@hotmail.com

Cell: 079 506 538

Kind Regards

Ms Veronica Mmakoma Motloutsi
### For administration purposes:

Name: ____________________________

Company Name: __________________ 

I wish to participate in this survey or interview (mark with X):  Yes □ No □

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### Section 1: Profile

1. What is your Job Title?
   - Chief Information Officer
   - Executive: Governance and Compliance
   - Chief Executive Officer
   - Other, please specify

2. How do you describe your company’s industry or business focus?
   - IT/Telecom
   - Financial Services
   - Manufacturing
   - Utilities
   - Public Sector
   - Other, please specify

3. How many employees does your company employ in total?
   - Fewer than 100
   - 101 – 500
   - 501 -1 000
   - More than 1000

4. What is the annual turnover of the organisation?
   - 0 – 10 million rands
   - 10 – 40 million rands
   - 50 – 100 million rands
   - 110 – 250 million rands
   - 250 million or more

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### Section 2: Importance and Benefits of IT

5. What is the percentage of the organisation’s annual expense is spent on IT?
   - Less than 10%
   - 10%
   - 20%
   - 30%
   - 40%
   - 50%

6. Who is the key champion/sponsor for IT Governance in your organisation?
   - CEO
   - CIO
   - CFO
   - Executive: Compliance and Risk
   - Board Committee Members
   - None
   - Other, please specify
7. Which IT Governance Framework is applied in your organisation
   - ITIL
   - COBIT
   - ISO
   - Val IT
   - Internally developed Framework
   - Other, please specify
   - None

8. How important are the following outcomes of your IT governance, on a scale from 1 (Not important) to 5 (Very Important).

<table>
<thead>
<tr>
<th>Governance Outcome</th>
<th>Rating</th>
</tr>
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<tbody>
<tr>
<td>Cost Effective use of IT</td>
<td></td>
</tr>
<tr>
<td>Effective use of IT for growth</td>
<td></td>
</tr>
<tr>
<td>Effective use of IT for Asset utilisation</td>
<td></td>
</tr>
<tr>
<td>Effective use of IT for business flexibility</td>
<td></td>
</tr>
</tbody>
</table>

9. How would you rate your organisation’s maturity level of IT governance?
   - **Non existence**, There is no senior management oversight of IT-related activities to ensure that the enterprise’s IT goals add value to the organization and to ensure that IT-related risks are appropriately managed
   - **Initial**, there is a realization that more formalized oversight of IT is required and it needs to be a shared management responsibility requiring the support of top management.
   - **Repeatable but intuitive**, the concept of IT governance does not exist formally and oversight is based mostly on management’s consideration of IT-related issues on a case-by-case basis. The governance of IT depends on the initiative and experience of the IT management team, with limited input from the rest of the organization.
   - **Defined process**, An organizational and process framework has been defined for oversight and management of IT activities and is being introduced to the organization as the basis for IT governance
   - **Managed and measurable**, Target-setting has developed to a fairly sophisticated stage with relationships between outcome goals in business terms, and IT process improvement measures now well understood. Real results have been communicated to management in the form of a balanced scorecard.
   - **Optimised**, the IT governance practices have developed into a sophisticated approach using effective and efficient techniques. There is true transparency of IT activities, and the board feels in control of the IT strategy.

Section 3: Strategic Alignment

10. Can you briefly describe how your organisation’s IT strategy formulation is organised?
   - At an overall corporate level
   - Within strategic business units
   - Within functional departments (R&D, HR, Finance)
   - Within your product/service deliver lines
   - Individual countries (if it is a global company)
11. What is the role of the IT Strategy committee Meeting
   - Advise the board on the formulation of IT Strategy
   - Ensuring IT Investment is aligned with business priorities
   - Determine overall IT Investment strategy
   - Measuring IT performance
   - Regulatory/Legal compliance
   - Other (please explain)

12. Who chairs in your IT strategy committee Meetings
   - CEO/MD
   - CTO/CIO
   - Chairman of the board
   - Information Security Board
   - Head of Departments

13. To whom does the IT Strategy Committee report?
   - Board of directors
   - CEO/MD
   - Senior Management Committee
   - Chairman
   - None
   - Others (Explain)

14. How Frequent does the IT Strategy Committee Meet
   - 2-3 times a month
   - Monthly
   - Quarterly
   - Annually
   - Never

Section 4: Performance Measurement

15. Where does the responsibility lie for measuring the performance of the IT department as a whole?
   - In the business unit
   - In the IT Department
   - In both, business unit and IT Department
   - It varies depending on circumstances

16. What is the role of the board in IT Governance Performance Management
   - Ensure that IT delivers on the promise of related strategies through clear expectations and measurements
   - Ensure strong link between business objectives and performance measures
   - Develop realistic IT performance measurement plan, along with appropriate metrics

17. What is the role of CEO in IT Governance Performance Management
   - Ensure that IT delivers on the promise of related strategies through clear expectations and measurements
   - Ensure strong link between business objectives and performance measures
   - Develop realistic IT performance measurement plan, along with appropriate metrics

18. What is the role of CIO in IT Governance Performance Management
- Ensure that IT delivers on the promise of related strategies through clear expectations and measurements
- Ensure strong link between business objectives and performance measures
- Develop realistic IT performance measurement plan, along with appropriate metrics

19. Which of these methods are you using to measure the value of your IT projects and investments (select more than one)

- The return on investment
- The payback period
- Balanced scorecard
- Net present value
- Other (please specify)
- None

Section 5: Risk Management

20. Evaluate your company’s ability to apply the following best practices

<table>
<thead>
<tr>
<th>Practice</th>
<th>Very Good</th>
<th>Good</th>
<th>Fair</th>
<th>Not Good</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior management individuals’ ownership of the risk management process</td>
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<tr>
<td>Clear communication of risk management policies to all staff members</td>
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<tr>
<td>A framework for management of risk</td>
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<tr>
<td>An organisational culture that supports well-thought through risk taking and innovation</td>
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<tr>
<td>The management of risk fully embedded in management processes and consistently applied</td>
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<tr>
<td>Close linkage of risk management to the achievement of business objectives</td>
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<tr>
<td>Assessment and management of risks associated with other organisations</td>
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<tr>
<td>Active monitoring and regular reviewing of risks</td>
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</tbody>
</table>

Section 6: Resource Management

21. Our governance process, includes the management of

- Assets
- Contract or Master Service Agreements
- Service Levels Agreements and Operational Levels Agreements
- All of the above
- None of the above

Section 7: Value Delivery

22. How do you manage the total cost of IT

- There are continual processes to manage cost of IT, the cost of IT is managed effectively and the organisation is able to achieve optimal IT spending
- The cost of IT is managed effectively
- Total cost of IT is not managed, however there is a plan in place to manage cost of IT

23. Does your organisation measure the return on IT investment / IT Asset?

- There are continual processes to measure the return on IT Investment/IT Assets, this is managed effectively and the organisation is able to achieve optimal IT spending
- The return on IT Investment is measured effectively
• The return on IT investment is not measured, however there is a plan in place to introduce measuring tools/matrix

24. Your organisation has IT scorecard that covers value creation?
• Yes, All aspects of the business are measured including (financial, customer, processes, and learning and growth
• Yes, the organisation’s scorecard has evolved into one that is focused on the most important measures relevant to the enterprise’s overall business strategy
• Yes, results are communicated to management in a form of balanced scorecard
• No, we don’t have IT scorecard, however there is a plan in place to implement one
• No, we don’t need IT scorecard.

Section 8: General IT Governance Profile

25. Does your organisation current IT practices includes any of the practices and how well are the implemented?

<table>
<thead>
<tr>
<th>IT Governance Practice</th>
<th>Very Good</th>
<th>Good</th>
<th>Fair</th>
<th>Not Good</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setting up the right organisation for overseeing and directing all organisation’s IT resources</td>
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<tr>
<td>The board reviews IT budgets and plans on a regular basis</td>
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<tr>
<td>The IT project portfolio is managed by business departments, supported by the IT department</td>
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<tr>
<td>IT resource requirements are identified based on business priorities</td>
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<td>Some form of an overall IT Strategy Committee</td>
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<td>A standard procedure for investment selection (IT Investment Committee)</td>
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<tr>
<td>IT scorecard exists, is understood by business people and cover IT value creation</td>
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<tr>
<td>Central oversight of overall IT architecture (IT Architecture Board or committee)</td>
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</tbody>
</table>
## Annexure B: Consistency Matrix

**TITLE:** The state of IT governance in the top 20 IT spending companies in South Africa.

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Literature Review</th>
<th>Data Collection Tools</th>
<th>Data Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the maturity level of IT governance?</td>
<td>ITGI (2003), ITGI (2005a)</td>
<td>Questionnaire Question 9, 25</td>
<td>Descriptive Statistics</td>
</tr>
</tbody>
</table>
Annexure C: Results