

**DERIVING VALUE FROM IT INVESTMENTS  
WITHIN BOUTIQUE HOTELS: A BUFFALO  
CITY CASE STUDY**

by

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**Thabelang Mathe**

**Dissertation**

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## ABSTRACT

Even though many organizations invest in IT, the value that IT is expected to contribute is still not clearly understood. Researchers agree that IT has become a crucial element to business operations and business existence. However, while there is continued investment in new information technologies and systems, organizations are not certain whether significant value is derived from IT investments. The failure to realize good return on IT investments is ascribed to a lack of understanding of IT by organizations and also the failure by organizations to align IT strategies with business strategies. The lack of alignment leads to the failure to match the right IT to the correct task, which leads to the poor application of systems and poor allocation of human resources to tasks. Therefore, organizations such as Small and Medium Enterprises (SMEs) in particular Boutique Hotels, are noted for their failure to derive better IT value. Their unique characteristics are understood to be influential in the way IT is used and managed by affecting the delivery of value from technology. In order to enable Boutique Hotels to derive more value from IT, the IT governance frameworks, Val IT and CobiT (ITGI, 2007), were examined as these integrate good practices to ensure that an organization's IT supports the business objectives. In addition, the Task Technology Fit (TTF) (Goodhue and Thompson, 1995) and Gap Analysis (Heeks, 2001) theories were highlighted as these prescribe the platform ideal for more value to be derived from IT. The current status of Boutique Hotels in Buffalo City was assessed through the use of questionnaires and interviews. The collected data was analyzed and resulted in the development of a model that can be used by Boutique Hotels in order to derive more value from IT and to maximize the use of IT.

# DECLARATION

I \_\_\_\_\_ hereby declare that:

- The work in this dissertation is my own work
  - All sources used or referred to have been documented and recognised.
  - This dissertation has not previously been submitted in full or partial fulfilment of the requirements for an equivalent or higher qualification at any other recognised institution.
-

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**PART 1**  
**INTRODUCTION AND THEORETICAL FRAMEWORK**

# CHAPTER 1

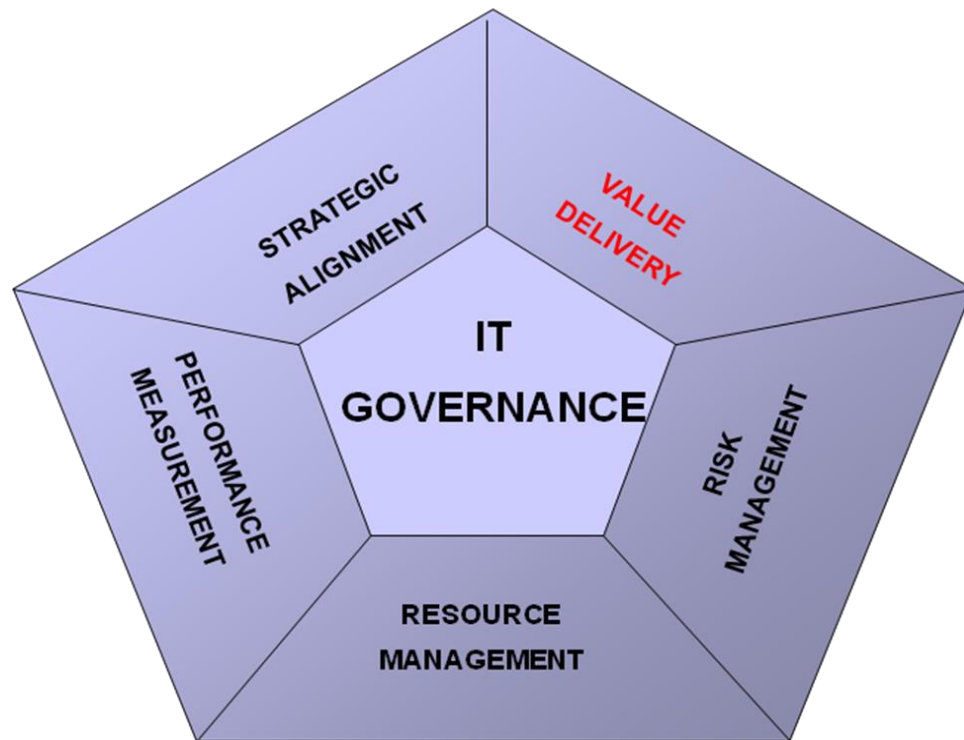
## INTRODUCTION

### 1.1 Background

According to the Information Technology Governance Institute (hereafter referred to as ITGI) investments in Information Technology (IT) are growing extensively and business managers are concerned that the benefits from these IT investments are not as high as expected (ITGI, 2007). Research shows that organisations worldwide are losing out on their IT investments because they are failing to derive sufficient value from investments in IT (Bowen, Cheung and Rohde, 2007; ITGI, 2007; Rai, Patnayakuni and Patnayakuni, 1996). Therefore, an assessment of whether there is significant value derived from IT becomes essential for any organisation before making further IT investments.

It is important to note that the absence of IT governance practices within organizations leads to the underperformance of IT investments. ITGI (2007) states that IT governance integrates good practices to ensure that the organization's IT supports the business objectives. Thus, by applying IT governance policies and procedures, an organization can take full advantage of its information, thereby maximising benefits and gaining competitive advantage. Furthermore, the key elements of IT governance are to give assurance to organizations about the value of IT, the management of IT-related risks and increased requirements for control over information (ITGI, 2007). These practices help organizations optimise IT investments, ensure service delivery and provide a measure against which to judge when things do go wrong.

The ITGI has prescribed five focus areas for IT governance as depicted in Figure 1.1.



**Figure 1.1: Five focus areas of IT governance (ITGI, 2007:7)**

Figure 1.1 shows that IT governance is dependent on five focus areas. To achieve effective IT governance, organizations have to ensure a balance on all the focus areas. However, the focus of this research project is on the Value Delivery focus area.

Value from IT is defined by ITGI (2007) as a function whose primary focus is ensuring that IT delivers the promised benefits. These promised benefits could be an improvement to the efficiency and effectiveness of business processes (Rai et al. 1996), improvement in strategic planning (Levy and Powell, 2005) and increased financial returns (ITGI, 2008a).

It is important to note that researchers view IT value differently. According to Ward and Peppard (1996) IT value is the contribution of information technology to the achievement of business goals. This means that when information technology supports the business strategy, an organization realizes IT value. In addition, value from IT is defined by Gregor, Martin, Fernandez, Stern and Vitale (2006) as the IT-related organizational transformation that leads to benefits that are strategic, informational and transactional. All the definitions illustrate that

value is obtained when IT leads to the successful achievement of business goals and strategies in organizations.

The ITGI (2008a) has established that there is an increase in IT investments yet there is less value derived from these investments. This is attributed to the failure by organizations to derive value from such investments. This failure is due to a lack of understanding of what constitutes IT value (Lin and Shao, 2006), and lack of IT expertise in organizations (Ward and Peppard, 1996) plus the failure by organizations to measure IT value (Kim and Sanders, 2002).

The failure for IT to deliver better value is identified in different types of organizations (ITGI, 2008a). However, this study will focus on the Small and Medium Enterprises (SMEs), in particular Boutique Hotels. The size of the Boutique Hotel will be determined by the number of employees and number of rooms a hotel has. Financial turnover and capital investments were not considered. Boutique Hotels are organizations with unique characteristics that can hinder the adoption, use and management of IT investments. These characteristics include, the owner's IT knowledge and lack of understanding of IT value (Levy and Powell, 2005), uncertainty of environment (Neirotti and Paolucci, 2007), lack of resources (Ward and Peppard, 1996), challenges in creating value (ITGI, 2008a), to mention a few.

According to (Lin and Shao) the lack of understanding of what constitutes IT value is due to a lack of alignment in IT strategies to business strategies. Technology is often used in isolation to business strategy, hence resulting in IT projects underperforming. Furthermore, the lack of IT expertise in small organizations such as Boutique Hotels is identified as contributing to the underperformance of IT as these organizations have to rely on expertise from organizations that often do not understand the dynamics of a small organization (Levy and Powell, 2005). Therefore, the lack of skills and lack of understanding of value leads organizations to fail to measure the contribution of IT to business operations.

The failure to measure IT value is also attributed to the weaknesses of traditional measuring methods. Traditional measuring methods fail to measure the intangible benefits of technology such as improved information capability, timely service delivery and improved quality of service (Kim and Sanders, 2002; Ford, 1996). According to Gregor et, al. (2006) the failure to measure IT value is due to measurement errors, management practices and time lags between investment and productivity gains. Thus, the inability to ascertain value from IT affects the use of IT by organizations and leads to underperformance of IT.

This research project addresses the issue that organizations can achieve better value from IT investments when IT enables effective and efficient business processes, IT resources are used responsibly and IT risks are managed appropriately (ITGI, 2007; Peppard and Ward, 2004; Ward and Peppard, 1996). The understanding of IT within organizations enables more and better value to be derived from IT investments, hence the terms “more”, “added” and “better” value will be used to indicate the process of deriving value from IT.

The identified business processes where IT can be applied within Boutique Hotels are bookkeeping, invoicing, stock ordering, customer information management, marketing and room management. The results of applying IT effectively and efficiently in these processes is an increase in better service delivery, competitive advantage, cost saving and retention of customers.

To fully assess the value of IT, this study highlights the importance for organizations to adopt IT governance practices and processes. Bowen et, al. (2007) note that IT governance enables business executives to formulate policies and procedures plus implement them in specific applications and monitor outcomes thereof. The ITGI (2008b) highlights that without effective governance and good management, IT enabled business investments provide an equally significant opportunity to destroy value.

In order for IT governance policies and practices to be fully adopted organizations can adopt the Val IT framework which focuses on the investment decisions related to IT and the CobiT (Control Objectives for Information and related Technologies) which focuses on what is required for adequate management and control of IT (ITGI, 2007). In order to assess the gaps that may exist in process capability in an organization, a maturity model can be used. In addition, Heeks (2001) proposes a gap analysis theory, which purports that there are seven dimensions of change which influence the adoption and use of IT. More value from IT is derived when organizations assess their current and desired status, against those seven dimensions. These frameworks and the maturity models will be referred to later in this study.

Therefore, this research project investigates if SMEs, in particular Boutique Hotels in Buffalo City, are deriving value from the use of IT. The study provides recommendations in the form of a model that these Boutique Hotels can use as a guideline in deriving added value from the use of IT.

## **1.2 General statement of the research question**

The aim of this study was to create a model that can be used by Boutique Hotels to derive added value from IT investments. This model will improve the selection process of IT investments by ensuring alignment of IT strategies to business strategies, hence improving the value that is derived from IT. The study of the primary and secondary research questions follows.

### **1.2.1 Primary research question**

*What would ensure that Boutique Hotels in Buffalo City can maximise the value of their Information Technology investments?*

For organizations to optimally maximise IT investments, there has to be an understanding of how IT supports business strategy. The alignment of IT with business strategy and its use may

allow competitive advantage to be achieved (Levy and Powell, 2005; Peppard and Ward, 2004). The alignment of IT to business strategy results in organizations acquiring the IT that is best suited for its business processes, thus deriving more value from IT investments. In addition, the alignment of IT to business strategy results in the identification of plans that lead to value realization, plus the development of monitoring and evaluation plans to ensure that value continues to be derived (ITGI, 2007).

This research project has established the factors that should exist for Boutique Hotels to derive added value from IT. Reputable frameworks such as CobiT and Val IT (ITGI, 2007) were used in order to define the success factors that should exist for an organisation to derive added value from technology.

CobiT sets out high-level control objectives that relate to the value domain within the IT governance pentagon. The Val IT framework highlights processes, which if applied correctly, results in good value delivery. These frameworks focus on the effectiveness and efficiency of the choice of investments made by an organisation (ITGI, 2007).

This research problem serves to assess the critical factors that should exist in Boutique Hotels for value to be maximised. The IT governance frameworks and existing literature were used to determine these factors. The study of the existing literature and frameworks also resulted in the development of a model that Boutique Hotels can use to derive more value from IT investments.

### **1.2.2 Secondary research questions**

#### *1. Why is IT value delivery important for Boutique Hotels?*

The importance of value delivery is necessitated by the failure of many organisations to realise expected benefits from IT investments (ITGI, 2008a). The value contribution of IT has to be

ascertained so that organisations do not continue incurring costs while IT projects continue to underperform.

Peppard and Ward (2004) suggest that IT has become pivotal to the existence of most organisations and that should the technology used by organisations come to a halt, they would cease to function. Thus, the study of value delivery is essential as IT use is key to the survival of many organisations. In addition, Ward and Peppard (1996) suggest that often IT projects focus on the delivery of the information technology or systems without focusing on the delivery of benefits from that technology. Thus, the study of the value delivery is necessitated by the increased underperformance of IT projects as more organisations continue to adopt IT.

Value delivery from IT investments is instrumental in the creation of competitive advantage, and to the survival of Boutique Hotels (Oz and Jones, 2008). The competitive advantage could be in the form of enhanced and specialised services to customers, differentiation of services from competitors, the establishment of alliances with other organizations and (or) suppliers and the reduction of cost when applied to operational processes. In essence, deriving value from IT can lead to the transformation of an organisation. This transformation could be in the learning culture, enhanced use of technology and other possible potential areas from where value can be derived (Gregor et al. 2006).

For value delivery to take place, Boutique Hotels have to assess their IT capability and IT competencies. IT capability is the ability of an organization to align information technology to its business performance. In addition, IT is the ability to translate the business strategy into long term architectures, technology infrastructure and resourcing plans that enable the implementation of the strategy (Peppard and Ward, 2004:176). IT competencies refer to the resources an organization has, not only IT resources, but knowledge and skills within the IT function and other functions as the IT function cannot work in isolation. Without the right competencies, an organization cannot connect its technology to its business operations to attain

maximum business performance (Peppard and Ward, 2004). Thus, when an organization is able to connect the correct IT to its business operations and processes using the right skills and resources, there is appropriate usage of IT which leads to added value from IT.

According to ITGI (2007) it is important for organizations to have processes in place which will ensure that value is created, while risk is managed. The value that is created is based on the strategy of the organization and its capacity so that it can be able to deal with challenges and pitfalls that arise through the use of technology.

*2. What are Boutique Hotels in Buffalo City currently doing to maximise the value delivery of IT?*

Boutique Hotels are organizations with unique characteristics that influence the use of IT. Levy and Powell (2005) highlight that the owner's attitude to IT and IT use is instrumental in how an organization adopts IT. The lack of understanding of IT by an owner of an organization can lead to the failure of information technologies adopted and also the failure to derive more value from these information technologies.

The Val IT and CobiT frameworks were used to develop a research instrument which aided in assessing the current status of Boutique Hotels' use of IT in Buffalo City. In addition, the CobiT's maturity model was examined. It is a reputable model which has been applied in many organizations. The objective of using a maturity model is to enable organizations to identify challenges in value delivery processes and capability and also demonstrate how to set priorities for improvement. For Boutique Hotels to be able to increase the value that they derive from IT investments, the assessment of their current status is essential. Furthermore, the analysis of the current status assisted in the development of the model that will enable Boutique Hotels to derive added value from IT.

3. *How can the Boutique Hotels improve their use of IT in order to add value to their businesses?*

The aim of this study was to develop a model that will enable Boutique Hotels to derive more value from IT investments. According to Ward and Peppard (2002), the relationship between the business, IS and IT strategies is essential for an organization to derive more value from IT investments. Establishing such a relationship requires organizations to identify the potential impact of IT and also evaluate the information systems and technology required to enable delivery of the business strategy.

Furthermore, Peppard and Ward (2004) state that the alignment of the IT strategy with the business strategy leads to organizations improving their IT capability. IT capability is enhanced when an organisation is able to position its competencies. The link and importance of the quality of IT and quality of users of the IT is highlighted in the theoretical framework of this study, the Task Technology Fit (TTF) theory.

The TTF theory addresses the issue that the capabilities of the technology that an organization uses should match the demands of the task (Dishaw and Strong, 1999). When this match is established a suitable candidate to use the technology is selected, hence improving IT use. Thus, the empirical study of the research project enabled the researcher to identify the reasons why poor alignment exists in IT and business strategies within Boutique Hotels.

In addition, Boutique Hotels can use the CobiT maturity model to assess the current status of their processes against known industry levels. Maturity models assist organizations to assess their process capability plus they are useful for indicating where IT process management shortcomings exist and set targets for where they need to be (ITGI, 2007). The correct maturity level for an organization is influenced by the identified business objectives, the environment and industry practices; thus the proposed IT Value Optimization Model in Figure

6.10 indicates that Boutique Hotels have to benchmark their operations and IT use against the hotel industry practices and the trends in the IT environment in order to continuously derive better IT value.

### **1.3 Significance of the study**

This study recommends a model that Boutique Hotels in Buffalo City can use to derive better value from IT. Many organizations rely on technology in order to achieve their business goals and objectives. It cannot be assumed that investments in IT match the benefits that these organizations derive from such investments. In addition, the technological environment is constantly changing with new products being introduced rapidly; thus the adoption of good technology can be difficult for some organisations.

The model in Figure 6.10 highlights the importance for organizations to understand why technology is needed and for what tasks it will be used. In essence, the emphasis of the model is on the alignment of the IT strategy to the business goals in order for better value to be derived from the use of IT. The choice of the information technology an organisation invests in should be influenced by the tasks and processes it has, while also being informed by the level of competence within users. Thus, the model proposes that a balance of the IT and business strategies is essential in order to derive better value from IT. Moreover, the balance between the two cannot be established without a current assessment of the technology and business environment already existing within an organization.

### **1.4 Research methodology**

This study began with a literature survey which focussed on the areas of value delivery and management plus on the nature of SMEs in particular, Boutique Hotels and their use of IT. The literature survey led to the development of a research instrument which was used to collect data to answer the research questions stated in Section 1.2. Furthermore, the study of the TTF

theory, which is the theoretical framework of this research project, guided the development of the research instrument.

The study adopted an interpretive qualitative research approach to address the research questions. Even though the qualitative research approach was the primary approach adopted, the data was quantified in order to help derive meaning. The data was collected by conducting in-depth interviews based on the developed research instrument, which is a questionnaire. The questions in the questionnaire were developed by using control objectives from the Val IT and CobiT frameworks and were influenced by the literature survey on the nature of Boutique Hotels and their use of IT.

Since the Val IT and CobiT frameworks are based on five focus areas of IT governance, only high-level control objectives, whose primary focus is value delivery, were selected in this study. In order to ensure collection of quality data, the questions used in the study were assessed by means of a pilot study. The elimination process led to a refined research instrument being used to collect information from a sample of 20 Boutique Hotels in Buffalo City as shown in Appendix A. The data collected by using in-depth interviews, as well as information obtained from literature reviews, formed the basis of the development of the model required to assist Boutique Hotels to derive more value from IT.

### **1.5 Delimitation of the study**

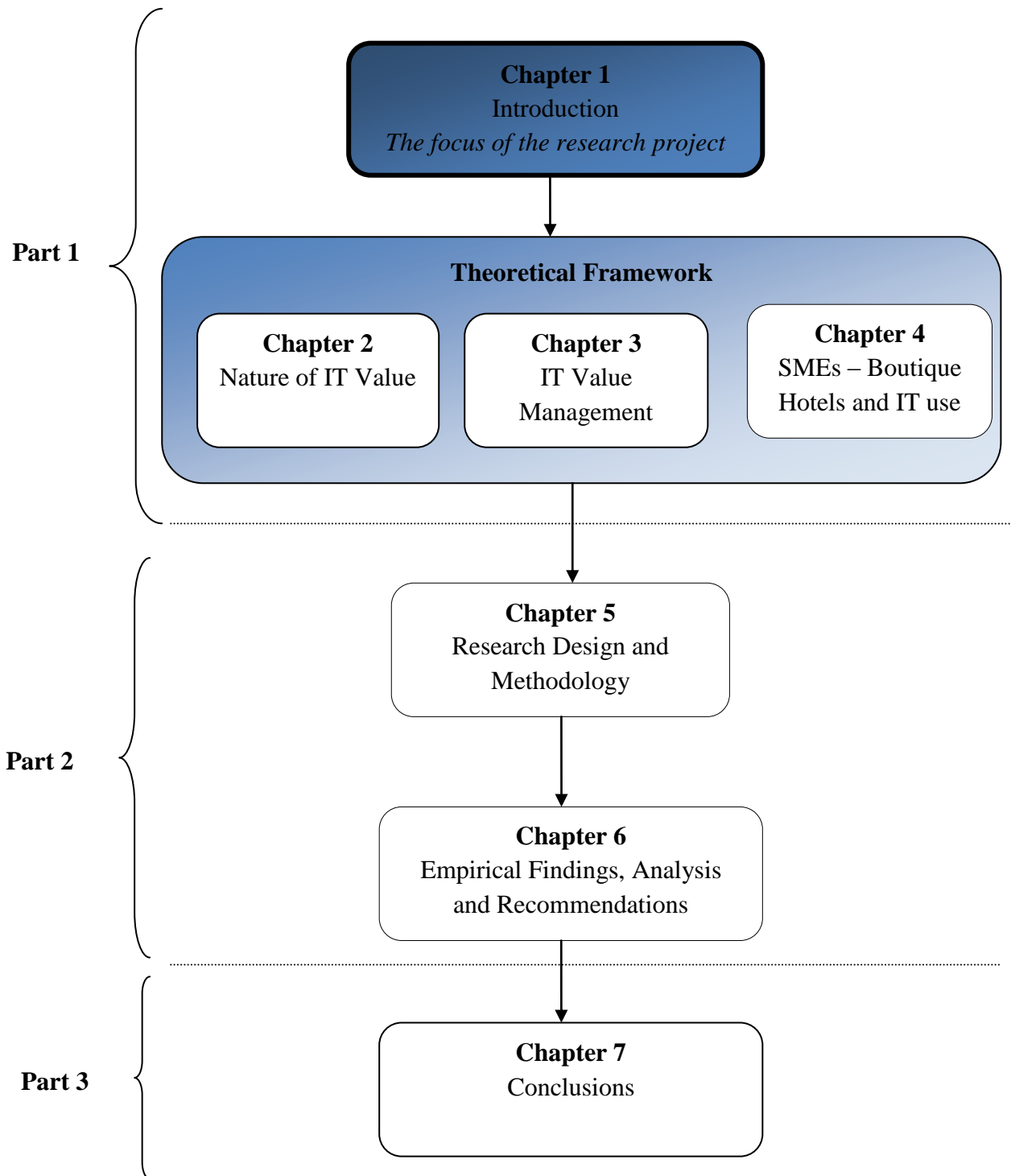
The focus areas of the study are the nature of IT value in organizations, guided by the value delivery focus area in IT governance, in the context of SMEs, in particular Boutique Hotels. Use is made of existing literature and frameworks to link these focus areas. The research project was limited to only one kind of SME, namely the Boutique Hotels. The selected organizations are located in Buffalo City and have similar characteristics.

In order to study the nature of IT value in organizations, use was made of existing literature and frameworks. These guided the definitions of value and also emphasised the importance of IT governance in organizations.

There are five focus areas in IT governance. These are *strategic alignment*, *value delivery*, *risk management*, *resource management* and *performance management*. The primary focus of the research was on the *value delivery* focus area of the IT governance pentagon. However, for an organization to maximise its use of technology, a balance of all of the five focus areas is necessary. Value delivery addresses the decision making processes in IT investments and also ensures that risks are managed.

## **1.6 Outline of Chapters**

The research project follows the chapter layout displayed in Figure 1.2. The layout in Figure 1.2 will be displayed at the beginning of each chapter with a highlighted box indicating the topic under discussion. A brief summary of each chapter will be provided in a box to the right of each diagram. This will enable the reader to see what will be covered before commencing the chapter.



**Figure 1.2: Outline of Dissertation Chapters**

**Part 1** of this study, which is the introduction and theoretical framework, consists of chapters one, two, three and four. *Chapter one* introduces the research project by giving a background into the study and also outlines the research objectives and significance of the study. This chapter also introduces the research methodology adopted and clarifies the scope of the research project. *Chapter two* is a theoretical study of the nature of IT value. The chapter

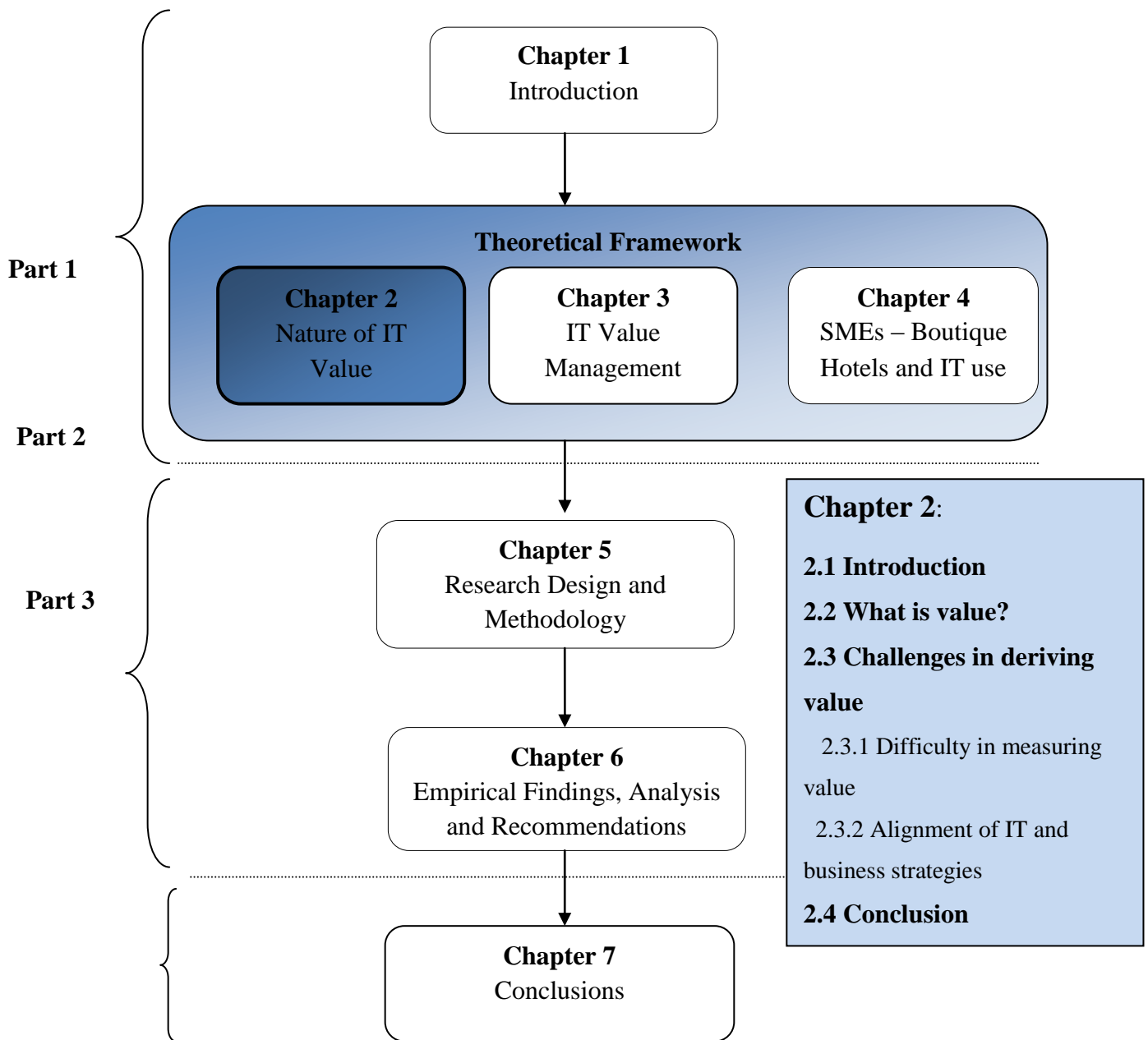
highlights the different views and definitions of IT value. In addition, this chapter explains the main challenges that hinder organizations from deriving IT value; the difficulty in measuring IT value and lack of alignment of IT to business strategies. *Chapter three* is a discussion of IT value management. IT governance is discussed in-depth in this chapter plus Val IT and CobiT frameworks. The domains, practices and processes that support value delivery within Val IT and CobiT are highlighted. The failure of traditional investment measuring methods is explored as this affects the adoption and use of IT by organizations. *Chapter four* examines the nature of SMEs, in particular Boutique Hotels and their use of IT. This chapter highlights the characteristics within Boutique Hotels as these influence the use and adoption of IT. In addition, IT capability is discussed in-depth as it is a key indicator of how organizations can derive added value from IT investments. The chapter concludes by highlighting the key areas where IT is applied within Boutique Hotels.

**Part 2** of this study, which is the research methods, empirical findings and analysis, consists of two chapters, Chapters five and six. *Chapter five* discusses the research design and methodology by highlighting how the data was collected to address the research questions. *Chapter six* discusses the empirical findings and data analysis methods adopted. In addition, the chapter presents the analysed data and the findings of the research project, which led to the creation of an IT Value Optimization Model.

**Part 3** of this study is the conclusion which consists of *Chapter seven*. This chapter concludes the research by highlighting the contribution made by this study and further research areas for the future. Furthermore, the chapter shows how each research objective was addressed.

# CHAPTER 2

## NATURE OF IT VALUE



### 2.1 Introduction

For an organization to derive maximum value from IT investments, an understanding of what value is to that organization has to be established. There is a general consensus that IT reshapes the basics of business. Aspects such as customer service, operations, product and marketing strategies and distribution are now heavily or sometimes even entirely dependent on IT (Chen, Liang, Yang and Zhu, 2006; Gregor et al. 2006). However, to assess the benefits of

IT, it is essential for one to analyze the expectations that organizations and IT users have about IT and the value they perceive they can derive from IT spending. Thus, the analysis of the perceptions organizations have becomes crucial because IT spending in organizations is influenced by the expected value to be derived from that IT. It seems as more money is spent, more value is expected from IT investments, hence the need to study the perceptions of the value of IT (Gregor et al. 2006).

This chapter will explore the different views that exist on the nature of value in IT. The IS/ IT quality model will be studied as it defines value as the product of the work quality and user quality. In defining value, the theoretical framework of this study will be discussed briefly, the Task Technology Fit theory. In addition, the benefits of IT will also be explored. This chapter will highlight the challenges that hinder organizations from deriving value. These are the failure to measure value and also the lack of alignment between the IT and business strategies in organizations.

## **2.2 What is IT value?**

It is important to note that there are many definitions of value from IT investments. Tiernan and Peppard (2004) state that value from IT emerges only through how IT is used by the organization. ITGI (2008a) concurs by stating that value delivery is about ensuring that IT delivers the promised benefits against strategy, concentrating on optimising costs. However, before exploring the definitions of IT value, it is important to understand that IT is viewed differently by different organisations.

The nature of IT value can be interpreted differently by different types of organisations (ITGI, 2008b). For commercial or profit making organizations value tends to be viewed primarily in financial terms and can be simply the increase in profit to the organization that arises from investment (Gregor et al. 2006). In addition, Peacock and Tanniru (2005) relate the impact of IT investments to productivity increases in an organisation. In such cases, the impact of IT

investments is assessed on how it impacts certain performance metrics increased in the number of units sold, increase in total dollar sales, or organization profitability. For non-profit making organizations including the public sector, value is more complex and is often non-financial in nature. In this light, value can be interpreted as the end business outcomes expected from IT-enabled business investment where such outcomes are maybe financial, non-financial or a combination of the two.

According to Melville, Gurbaxani and Kraemer (2007) IT value is defined differently by different organisations because some industries may contain a higher proportion of technologically proficient employees with specialized knowledge of how to apply IT to improve organizational productivity. Therefore, these differences might result in varying IT productivity or efficiency and effectiveness impacts across industries; thus causing IT to have different levels of impact on different types of organizations in different economic sectors.

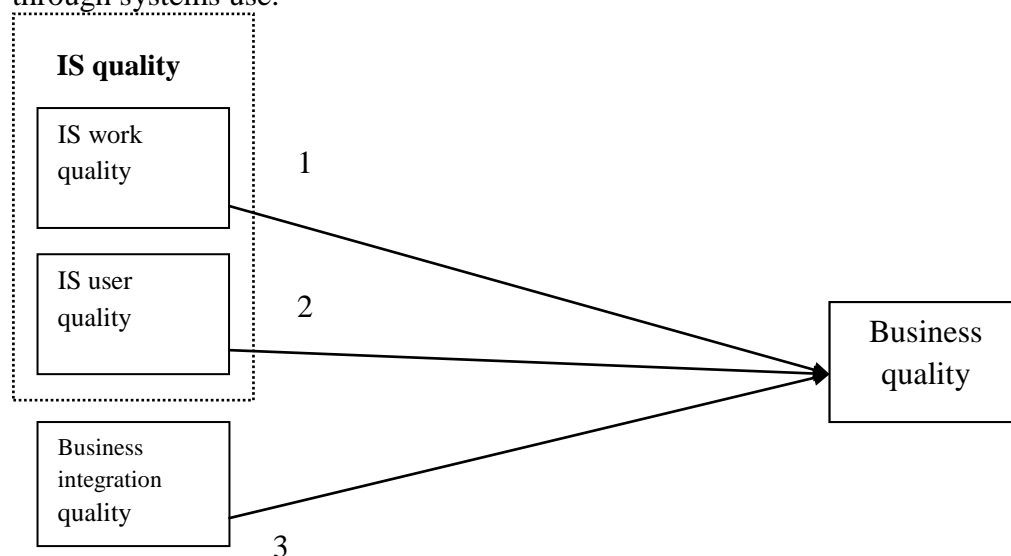
In contrast, Farrell (2003) in (Ward and Daniel, 2006) contends that IT is of great but not primary importance to the fate of industries and individual organizations. Farrell's research was to explore the link between increased productivity and increase in IT spending and her findings showed that the prime cause for increased productivity could be intensified competition within an industry as well as on organizations. Therefore, the increase in productivity could not be ascribed to an increase in IT spending during that period for any industry.

On the other hand, Melville et al. (2007) submits that early research found that the economic impact of IT is higher in manufacturing than in the services sector and that the economic contribution to output is higher in IT-producing industries than in IT-using industries. With such perceptions, one notes that the study of the impact of IT becomes essential and this research project will establish what the status of Boutique Hotels in Buffalo City is with regards to issue discussed above. Boutique Hotels are profit making organizations therefore it

is yet to be established how the hotels in Buffalo City interpret value from IT investments. Having highlighted that value can be interpreted differently by different organisations, it is essential that the different views on value from IT be explored.

Value from IT is defined by Lin and Shao (2006) as the substitutability of IT for both traditional capital and labour. Since the ability to secure the benefits of IT is partially determined by the potential of substituting IT for capital and labor, the input substitution issue becomes equally important. Lin and Shao (2006) state that using IT capital to replace ordinary capital or ordinary labour does not necessarily mean more technical efficiency. Thus, IT becomes valuable to an organization when more value is derived as a result of the technology substituting traditional capital and labour. If the substitution does not yield any change, the technology investment is less valuable (Lin and Shao, 2006).

According to Salmela (1997) value in IT is viewed as business quality that arises from IS quality. In this regard business quality is defined as the net value of an information system for the organization. The model in Figure 2.1 purports that value from IT is affected by both the cost of planning, developing, maintaining and using the system and by the benefits achieved through systems use.



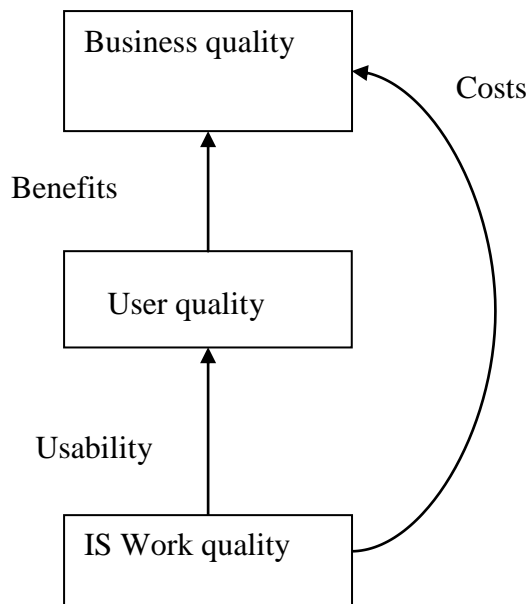
**Figure 2.1: Determinants of Business quality (Salmela, 1997:820)**

Salmela (1997) is of the opinion that for high business quality to be attained there has to be high quality in terms of *information systems work quality*, *information systems user quality* and *business integration quality*. He defines IS work quality as the product of IS processes and products which aim at ensuring efficient delivery and maintenance of IS products according to user requests. These processes could range from maintainability, flexibility, readability of code, availability of documentation, reusability, and testability.

He reveals that *IS user quality* is equal to the quality of IS processes and products from the perspective of users. The perspectives could be based on ease of use, ease of learning, flexibility in use, and security. Thus, poor user quality increases the costs of learning and using the system.

The *Business integration quality* factor views IS processes and products from a business perspective. Business integration covers the ability to identify the beneficial uses of IS in an organization, the ability to define critical IS requirements and the ability to support IS implementation which brings the desired change. Thus the model in Figure 2.1 defines value as the business quality that arises from a balanced interaction of the IS processes, the users of the systems and integration of IT with business goals in an organization.

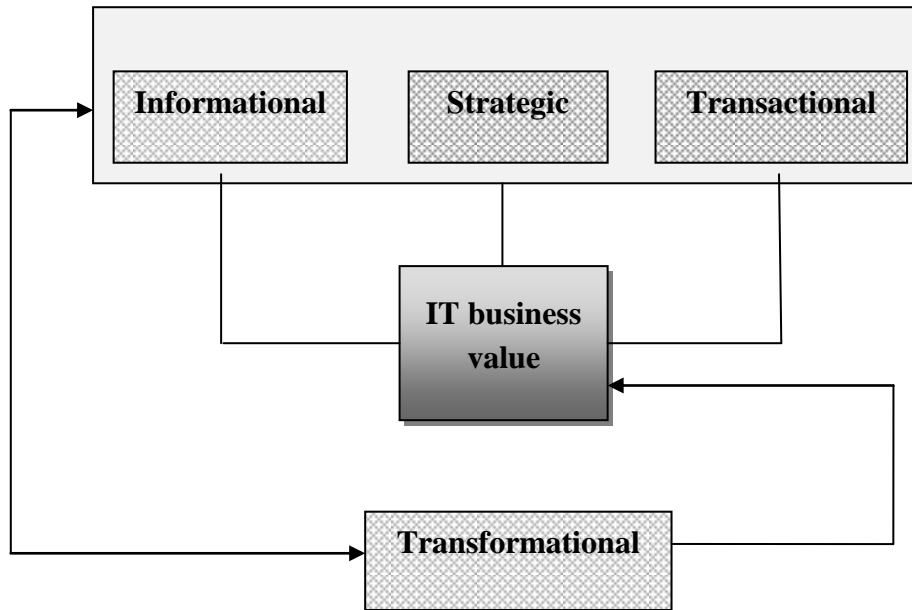
Andersson and Hellens (1997) endorse the business quality model by introducing the hierarchy of IS quality factor classes, as shown in Figure 2.2. These authors believe that information Systems (IS) quality is a product of software and hardware quality, the quality of the people that utilize the computer based systems. Andersson and Hellens (1997) state that at each of the quality factors shown in Figure 2.2, it is the people in the organisation that are responsible for ensuring that quality is attained using technology. Therefore a good interaction and understanding of the technology and the organizational goals for each factor ensure that organisations derive business quality.



**Figure 2.2: The organizational hierarchy of IS quality factor classes, (Andersson and Hellens, 1997: 838)**

Both models in Figures 2.1 and 2.2 propose that a synergy between business and IS will enhance the benefits that an organization can derive from the use of IT. These models also recommend that value from IT emanates entirely from the effective use of machines and software, but is also dependent on the quality of the users of the systems, as their failure to use the system properly, can lead to loss in value.

Gregor et al. (2006) deepens the discussion on value from IT by defining IT business value as organizational transformation. This transformation is seen in new business processes, new skills and new organizational and industry structures. In addition, IT value is seen to bring benefits such as strategic, informational and transactional benefits. Figure 2.3 illustrates the hypothesis on organizational transformation and the benefits of IT as suggested by Gregor et al. (2006).



**Figure 2.3: IT transformational benefits and other benefits, Gregor et al. (2006:255)**

Gregor et al. (2006) suggest that organizational transformation is a component of IT business value. Organizational transformation is defined as transformation induced by IT which brings about a new way of doing business and organizational learning. It is noted that the organizational learning feeds back to further changes in management practice and the application of IT.

These authors further suggest that IT investments should result in strategic, informational and transactional benefits. These benefits are defined briefly as follows:

*a) Strategic Benefit*

These include creating competitive advantage, aligning IT strategy with business strategy, establishing useful links with other organizations, enabling quicker response to change, improving customer relations, and providing better products or services to customers (Gregor et al. (2006); Oz and Jones, 2008).

*b) Informational benefit*

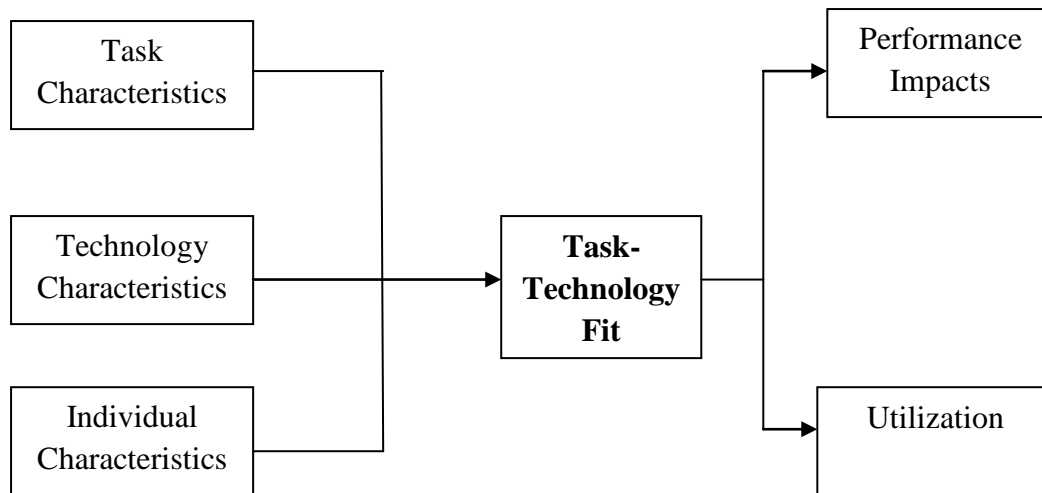
This type of benefit results in the following: enabling faster access to information, enabling easier access to information, improving information for strategic planning, improving information accuracy and providing information in more useable formats (Gregor et al. 2006; Peppard and Ward, 2004).

*c) Transactional benefit*

Transactional benefits include savings in supply chain management, reducing operating costs reducing communication costs, avoiding the need to increase the workforce, increasing return on financial assets and enhancing employee productivity (Gregor et al. 2006; Oz and Jones, 2008).

It is clear from the discussions above that value from IT is not merely the investment in technology alone. Peppard and Ward (2004) state that the value derived from IT investments only emerges through business changes and innovations, new business models, improved information and improved efficiency in processes and operations. Thus, the impact of an investment in IT will not necessarily be monetary, but rather an improvement in the quality of work and improved effectiveness within an organisation.

Furthermore, the Task Technology Fit (TTF) theory, which is the theoretical framework adopted in this study, aids in the understanding of IT value. The TTF theory shown in Figure 2.4 states that value from IT is derived when there is a match in the technology characteristics and the task characteristics. The match in these characteristics leads to the appointment of a suitable user of the system (Goodhue and Thompson, 1995).



**Figure 2.4 Task-Technology Fit theory, Goodhue and Thompson (1995:217)**

The TTF theory suggests that the performance in an organization is guaranteed when there is a good interaction between the technology and the task. This model supports the views highlighted earlier that technology on its own does not deliver value to an organisation, but the use of the technology and the quality of the user leads to an organisation deriving value from its IT investments. Even though IT value is viewed differently by different types of organizations, it appears that organizations are experiencing challenges that hinder them from deriving value from IT investments.

### **2.3 Challenges in deriving IT value**

As many researchers agree, IT has grown to become an integral part of every organization; it is important to note that there are challenges that hinder organizations from deriving value from IT (Neirotti and Paolucci, 2007; Tiernan and Peppard, 2004).

According to ITGI (2008b) and Lin and Shao (2006) most organizations have been unable to determine with any confidence the extent to which IT expenditure delivers real value. The ITGI (2008b) reports that there are many reasons for this, including what is regarded as the often misunderstood nature of IT in all its forms and the consequent lack of confidence that non-IT specialists have in understanding both its opportunities and its risks.

Thus, one can establish that success in understanding the cost and benefit of IT value can be achieved only with business and IT working together in partnership. Curley (2004) in ITGI (2008a) states that a strategic alignment between IT and the business is a crucial factor in business value generation. Good strategic alignment implies a that there should be a positive bi-directional relationship between IT and business strategy. Within this context IT and business alignment should be measured not only by the extent to which IT supports the business, but also by the extent to which business strategy capitalizes on IT capabilities.

Therefore, one can establish that the measurement of IT value in organizations is dependent on alignment of IT with business goals. This alignment implies that the IT capability must be understood and must be appropriate to the demands of the business and must be leveraged to deliver that value (ITGI, 2008c).

According to Curley (2004) in (ITGI, 2008a) there are strategies that can contribute to achieving and measuring business value from IT. These are the successful management of the IT budget; IT capability and managing IT like a business. These strategies ensure that IT is not treated in isolation of business processes but that its effect on the business is measured against the business goals and objectives set by management. The challenges which will be discussed in this study are the failure to measure value from IT and the lack of alignment of IT goals and business.

### **2.3.1 Difficulty in measuring IT value**

Value from IT and its measurement has become controversial because research shows that the studies on the business value of IT are inconclusive and conflicting (Lin and Shao, 2006). An issue that is closely related to IT business value is the phenomenon known as productivity paradox. Productivity paradox is the apparent failure of a massive investment in IT to contribute to productivity growth. “You can see the computer age everywhere, but in the productivity statistics” (Solow, 1987 in Gregor et al. 2006:250).

According to Brynjolfsson (1993) in (Gregor et al. 2006), the productivity paradox exists because of the following:

- measurement errors in both IT capital and outputs;
- significant time lags between investment and productivity gains;
- management practices and their importance in realizing the full potential of technology opportunities; and
- redistribution of productivity, in that some organizations gain higher productivity returns than their competitors.

Therefore, failure for organizations to attach the use of IT to productivity statistics has affected the use of IT as these organizations cannot justify investments in IT.

Dehning, Dow and Stratooulos (2004) concur with Gregor et al. (2006) on the factors that affect productivity statistics. They further state that the lags between investment and productivity gains are due to the learning and adjustment period that any organization will go through when investing in IT. Dehning et al. (2004) states that IT investments and adoption often lead to restructuring of the organization and thus this leads to benefits associated with IT taking too long before they materialize. It is important to note that researchers agree that failure in measuring IT benefits is also caused by mismanagement of IT projects, lack of significant association between investment in IT and performance and also the fact that most organizations seem to forget that IT tends to rapidly become obsolete (Gregor et al. 2006; Dehning et al., 2004; Neirotti and Paolucci, 2007).

Lin and Shao (2006) state that for the productivity paradox to disappear, organizations have to enhance the efficiency in IT investments so that more investments in IT can be complemented by more value being derived from IT investments, value or results that can be then measured.

According to Avison, Cuthbertson and Powell (1999) the failure to measure value from IT is because information systems are judged in terms of speed of delivery, quality and cost, in the same way as contract cleaning and building maintenance might be judged. In this way, the value found in technology is inadequately measured and is not understood. The assertions above reflect that IT value may be misconstrued due to failure in measuring these benefits. However the measurement of the benefits will be guided by what IT value is known to be in an organization. The lack of awareness of the positive impact and benefits of technology hinders the use of technology by small organizations hence hindering them from deriving value from IT.

### **2.3.2 Alignment of IT and business strategies**

Tallon (2007) adds on to this discussion by stating that what further complicates the task of IT business value analysis and measurement is that as business strategies grow more complex, it becomes more difficult to ensure alignment between IT and business strategy and to assess IT business value against the goals for IT. Researchers note that there is positive impact on profitability due to variables like top management commitment, communication between IT department and corporate functions, and alignment of IT and business strategies (Tallon, 2007: Ward and Peppard, 1996): Neirotti and Paolucci, 2007).

For value to be realized from IT investments, the degree of fit and alignment with the organizations business goals have to be determined. Neirotti and Paolucci (2007) found that in their research, the following points have led to failure in deriving value from IT projects:

- weak connections between the business and IT planning processes;
- the organization fails to identify opportunities due to poor coordination of business and IT functions; and
- the failure for organisations to exploit the advantages of emerging technologies.

The importance of the alignment of IT and business goals is believed to be instrumental in optimizing the use of technology and deriving value from IT investments. Ward and Peppard (1996) establish that even though IT is critical to the business, the IT unit, as the provider of IT resources, often does not have a harmonious relationship with the rest of the business. These authors illustrate that the reason for this problem is that IT in general and IT professionals in particular are often late coming into an organization. It is believed most organizations have value systems and behaviour that exclude the use of IT and in many instances, the emergence of IT in such an organization could be seen as being imposed on the rest of the business, a forced rather than mutually desired marriage. This shows that without a good alignment of IT and business strategy, investments in IT will continue to fail.

Ward and Peppard (1996) continue to address the issue of a good relationship between IT and the business by assessing it based on the following:

- a) **Delivery** – when their focus of IT services is on improving the ability to deliver and support the IT based systems;
- b) **Reorientation** – when IT attempts to develop good relationships with the business functions and provides a variety of services to meet demands from functions, albeit without regard to the business importance of those demands;
- c) **Reorganization** – when IT tries to develop an integral relationship with business management to ensure that there is alignment of the business and IT functions.

In all, the relationship of IT and business should be such that both work towards the main objectives of the organizations; none of the two aspects can work in isolation in order to achieve maximum value to be derived.

## **2.4 Conclusion**

IT value has been defined as an improvement in operations, the introduction of new processes and skills and also the improved efficiency in an organization. Even though there are many

views on the contribution of IT in an organization, it has been established that technology alone cannot bring any value but its use by the most appropriate user and for the appropriate task, leads to value in IT.

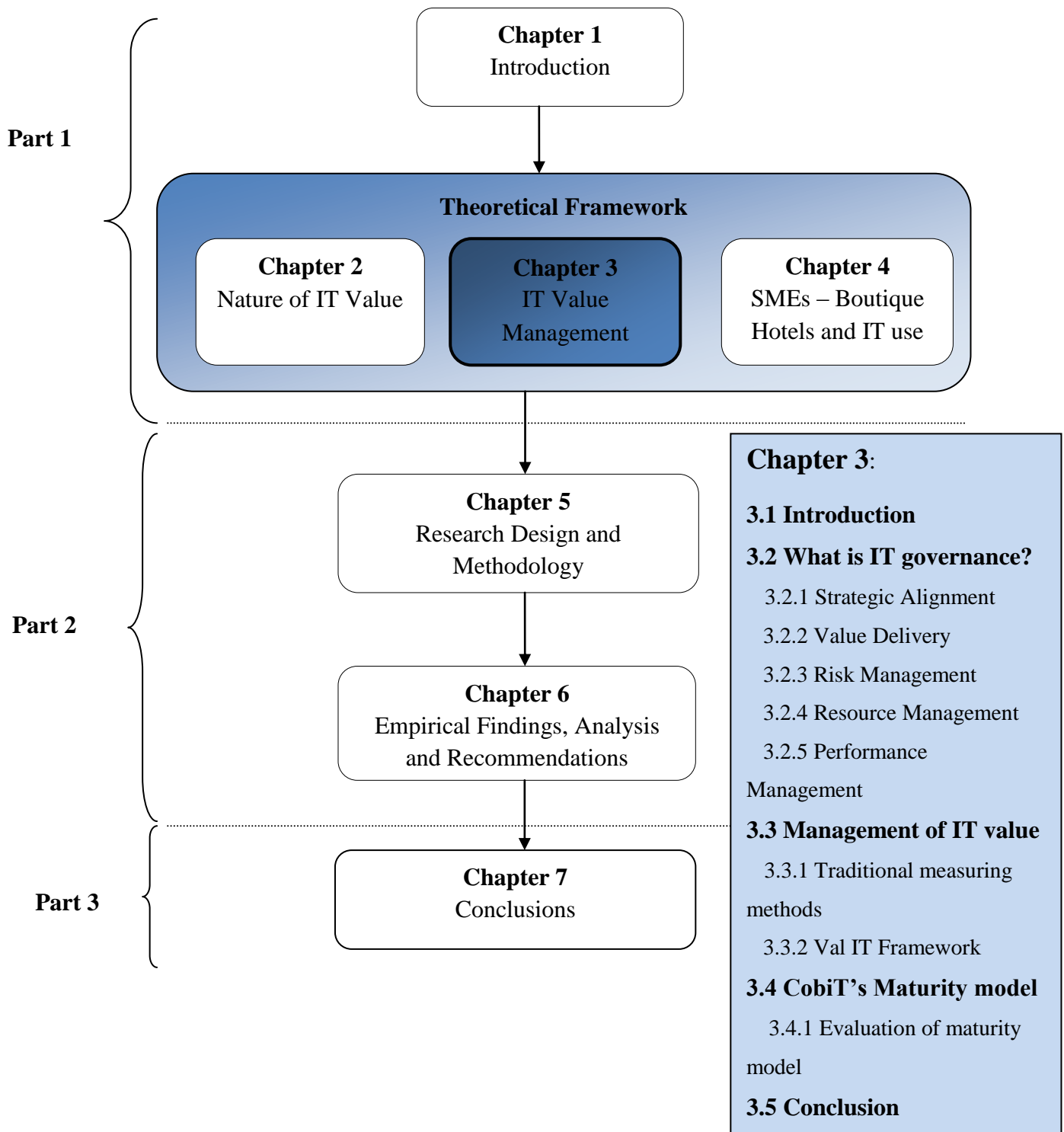
The difficulty in measuring value by organizations has been noted as a hindrance to investment in IT. The study notes that the failure to ascertain value from IT is mainly due to measurement errors, management practices and time lags between investment and productivity gains. The failure to measure value from IT is seen to affect organizations in all sectors; therefore as the focus of this study is on SMEs, particularly Boutique Hotels, the assessment of the different attributes of value will assist in the development of a model that Boutique Hotels can use to derive more value from IT.

The alignment of business and IT strategies in organizations has been noted as essential for IT investments to be valuable to organizations. The lack of alignment is attributed to the failure to match technology characteristics and task characteristics, and also the failure of organizations to view IT as an enabler.

However, to fully explore the reasons for IT investment failure in organizations, the way in which organizations manage their IT investments will be explored in the next chapter. Central to IT value management is the study of the IT governance approach, which stipulates the processes and practices that organizations have to adopt in order for value from technology to be derived. In addition, the problems associated with traditional investment measuring methods will be studied. Due to the weaknesses of the traditional investment measuring methods, this study will elaborate on the Val IT and CobiT frameworks, which prescribes how organizations can derive more value from IT in measurable ways.

# CHAPTER 3

## IT VALUE MANAGEMENT



### **3.1 Introduction**

In order to maximise IT investments, organizations should adopt IT governance practices. IT governance is the presence of structures and processes that ensure that IT is used in line with business objectives while managing risks (ITGI, 2008a). In the context of this study, IT governance best practices contained in the Val IT and CobiT frameworks will be studied as they are instrumental in the management of IT value.

The CobiT framework supports IT governance by ensuring that IT strategies are aligned with business strategies while managing risks and that IT enables business to maximize value thereof (ITGI, 2008a). The Val IT initiative supports IT governance by providing processes by which an organization can derive maximum value from IT investments and optimize its use of IT.

In order for these frameworks to be fully understood, this research project will reflect on the failures of traditional investment and capital budgeting methods, in the light of measuring value from IT investments. Kim and Sanders (2002) state that the difficulty in measuring IT value is linked to the intangible characteristics of the benefits promised by IT such as improved information quality, improved communication and controls and increased competitive advantages. This failure of management accounting principles to quantify value of IT investments strengthens the need for Boutique Hotels to implement IT governance principles in order to avoid the continued perception of IT project underperforming.

Furthermore, this chapter will discuss the five focus areas of the IT governance domain and highlight how Boutique Hotels can overcome the obstacles that have led to their failure to measure value and to maximize IT value creation and delivery. The research project will show how the IT governance frameworks Val IT and CobiT are essential for the good implementation of IT governance principles in organizations. Moreover this chapter will show how these frameworks complement each other in ensuring IT governance within organizations.

The Val IT framework focuses on IT investment decisions and the realisation of IT benefits while managing risks, whereas the CobiT framework focuses on what is required to achieve adequate management and control of IT in general (ITGI, 2008a). Additionally, the CobiT maturity model will be examined. Maturity models are useful in the assessment of the processes capability of organizations. In this study, the maturity model will be applied to assess the capability of the Boutique Hotels and also demonstrate ways in which they can close the gap between the current status and the desired level in deriving value from IT investments.

The study of the Val IT and CobiT frameworks is important to this research project as these frameworks are the core to the development of a model that Boutique Hotels can use to maximise value from IT investments.

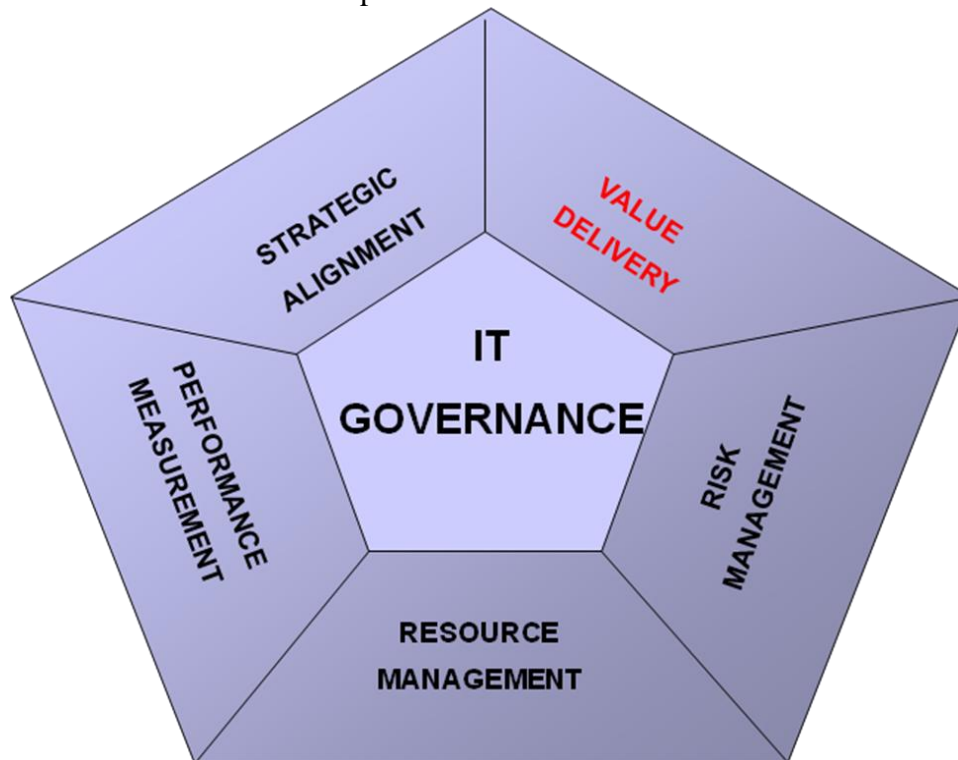
### **3.2 What is IT governance?**

IT governance is defined as “a structure of relationships and processes to direct and control the enterprise in order to achieve the enterprise’s goal by adding value while balancing risk versus return over IT and its processes” (ITGI, 2007:12). This definition emphasises the concept of value, value creation through risk management and value preservation. According to ITGI (2007:12) IT governance is also defined as “the responsibility of executives and the board of directors and executive management. It is an integral part of enterprise governance and consists of the leadership and organizational structures and processes that ensure that the enterprise sustains and extends the enterprises strategies and objectives.” This definition proves that IT governance centres on the creation of value while dealing with challenges and pitfalls that may arise through the use of IT, and also enabling a competitive advantage.

The ITGI (2008a) shows that there are two criteria that IT governance attempts to accomplish. The first is that IT delivers value to the business (business driven by strategic alignment) and the second is that IT risks are mitigated (driven by embedding accountability in the organization). Thus, IT governance framework has five focus areas as shown in Figure 3.1. Of

these five focus areas, two are outcomes, and three are drivers. The areas which focus on outcomes are risk management and value delivery while the drivers are performance measurement, resource management and strategic alignment (ITGI, 2008a).

Even though the focus of this study is on the value delivery domain within the ITGI domain, the other four focus areas of IT governance are also of great importance. It is reasonable to assume that unless success is achieved in the other four focus areas, achieving value delivery will remain elusive (ITGI, 2008a). Figure 3.1 illustrates the five IT governance focus areas. The Figure shows that there is interdependence between them.



**Figure 3.1: Five focus areas of IT governance (ITGI, 2007:7)**

Below is a brief discussion of each of the domains.

### **3.2.1 Strategic alignment**

“Strategic alignment focuses on ensuring the linkage of business and IT plans; defining, maintaining and validating the IT value propositions; and on aligning IT operations with organization operations” (ITGI, 2007:7).

The strategic alignment of IT strategies and business goals is essential for any organization to maximize IT investments. This domain assists organizations in creating an understanding of the internal and external business environment in formulating the mission, vision and strategy of the organization, while aligning the IT functions to the organization's environment (ITGI, 2008a). According to Neirotti and Paolucci (2007) some organizations fail to obtain a strategic advantage through IT projects because of weak connections between the business and IT planning processes. When alignment has been achieved, organizations can create IT value.

### **3.2.2 Value delivery (Value creation)**

“Value delivery is about executing the value proposition throughout the delivery cycle, ensuring that IT delivers the promised benefits against the strategy, concentrating on optimizing costs and proving the intrinsic value of IT” (ITGI, 2007:7).

To ensure value creation, organizations have to work on principles such as, delivery of promised benefits on time, within budget and intended benefits. Thus, IT processes should meet the expectations and objectives of the organizations. It is important to note that these expectations and objectives are mapped out by the organization's strategic objectives and also influenced by the environmental factors established in strategic alignment (ITGI, 2008a). The focus of this study is on this focus area.

### **3.2.3 Risk management (Value preservation)**

“Risk management requires risk awareness by senior corporate officers, a clear understanding of the organization's appetite for risk, transparency about the significant risks to the organization and embedding of risk management responsibilities into the organization” (ITGI, 2007:7).

This focus area deals with the demonstration by the organization of processes that can preserve value. The risk management covers aspects such financial risk, operational and systems risks.

For effective management of risk, organizations have to acknowledge that value preservation is a continuous process (ITGI, 2008a).

#### **3.2.4 Resource management**

“Resource management is about the optimal investment in and the proper management of, critical IT resources: processes, people, applications infrastructure and information. Key issues relate to the optimization of knowledge and infrastructure” (ITGI, 2007:7).

To enhance IT governance, the correct IT capabilities have to be established and deployed according to identified business needs. Resources needed for the advancement of business strategies have to be sourced and evaluated in order for the organization to leverage on the knowledge and the skills acquired (ITGI, 2008a).

#### **3.2.5 Performance measurement**

“Performance measurement tracks and monitors strategy implementation, project completion, resource usage, process performance and service delivery, using for example balanced scorecards that translate strategy into action to achieve goals measurable beyond conventional accounting” (ITGI, 2007:7).

The performance measurement focus area ensures that the other four focus areas achieve their desired outcomes. This focus area consists of activities such as audits, assessments and performance measurement methods (ITGI, 2008a).

De Haes and Van Grembergen (2004) note that to make IT governance work, the organization has to integrate various structures and processes. Determining the right combination of mechanisms is therefore a complex endeavour and it should be recognized that what works for one organization does not necessarily work for another. This means that different

organizations should use a combination of different structures and processes and to implement IT governance successfully.

As more authors reflect on the strengths of IT governance, ITGI (2007) points out issues that have led to IT governance implementation failures in some organization. The points raised in this study are as follows:

- inadequate participation by management of the organisation;
- a lack of clearly articulated goals;
- a lack of clearly defined governance processes – key steps and critical success factors and
- lack of senior management buy-in and sponsorship.

It is believed that the prevalence of such issues in organizations hinders implementation of IT governance which consequently hinders the maximization of IT investments. Levy and Powell (2005) have carried out extensive research on the nature of SMEs in relation to use of IS and IT and have identified many characteristics of SMEs that hinder the practice of good IT governance. These will be discussed in detail in Chapter 4.

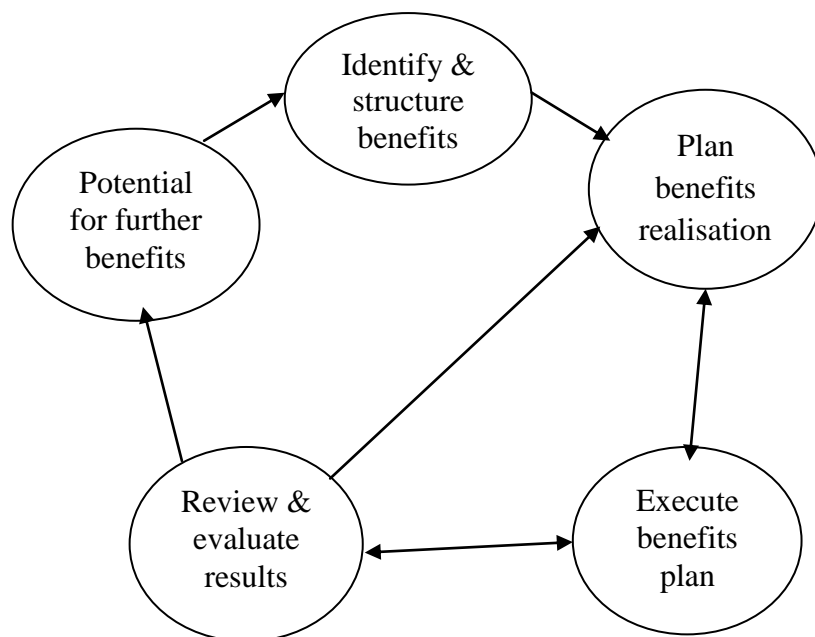
Therefore, ITGI (2007) purports that the successful implementation of IT governance principles and processes in any organization can ensure that organizations can leverage their IT investments. IT governance guides organizations in the way they spend and manage IT by aligning the IT strategy to the business strategy. In this way, organizations can apply IT governance principles to suit their particular business direction.

Since the emphasis of IT governance is the creation and preservation of IT value, the following section will highlight how organizations can manage IT value. The failure of traditional investment measuring methods will be studied and then a study on the Val IT framework will follow.

### 3.3 Management of IT value

According to Jurison (1996), problems in the management of IT value are as a result of a lack of understanding that an investment in IT does not create value automatically, but can create only the potential for value. Whether this potential is realized depends on how effectively the benefits are managed for business results. The notion above implies that business managers need information not only for measuring and evaluating IT benefits, but more importantly they need guidance on how to manage the investments so that benefits can be captured efficiently and effectively (Jurison, 1996).

According to Tiernan and Peppard (2004), for benefits to be measured and managed successfully, there has to be an understanding of the benefits and plans put in place to realise and execute the benefits. Figure 3.2 shows the IT benefit management process.



**Figure 3.2: IT Benefits Management, (Tiernan and Peppard 2004:611.)**

Figure 3.2 illustrates that an organisation has to understand and identify all the possible benefits that can be achieved through the use of IT. The planning of benefit realisation deals with how the benefits will be achieved, the business changes required and also to establish the performance measurement and monitoring of the technology investment (ITGI, 2008). When

executing the benefits realization plan, the organization monitors progress against the realization plan as the project is constantly evaluated while identifying potential benefits that may be realised (Tiernan and Peppard, 2004). The adoption of such a model in IT investment management ensures that Boutique Hotels can derive maximum value from IT investments and also measure the value and impact that the technology has contributed to the organisation.

The difficulty in proving the IT impact on business performance is due to inappropriate measures being used to measure IT value. Kim and Sanders (2002) point out that the difficulty with common evaluation methods is linked to the intangible characteristics of the benefit promised by IT, such as improved efficiency in systems, improved information quality, improved communication and control, enhanced capabilities and competitive advantages. Thus, it is noted that traditional measures have not been very effective in highlighting the various aspects of IT benefits (Ford, 1996; Jurison, 1996).

Peacock and Tanniru (2003) concur by stating that the impact of IT investments is often assessed on how they impact certain performance metrics, for example, an increase in the number of units sold, and an increase in total dollar sales or organization profitability. Such an approach has come under criticism because such ignores the impact of investments on business processes in the value chain that directly affects these performance metrics.

Additionally, it is important to note that value can be perceived differently by different organizations. ITGI (2008c) states that for commercial or profit organizations value tends to be viewed primarily in financial terms and can simply be an increase in profit to the organization arising from investment. For non-profit organizations including the public sector, value is more complex and is often non financial in nature. Therefore, value from IT can be summarized as the end business outcomes expected from IT-enabled business investments where such outcomes may be financial, non financial or a combination of the two (ITGI,

2008b). However, it is important for one to reflect on the nature of the traditional investment measuring methods.

### **3.3.1 Traditional measuring methods**

According to Kim and Sanders (2002), most managers facing the evaluation problems of IT investment have used various methods from simple computational formula to very complex techniques that weave both quantitative and qualitative analysis together. However, the failure of capital investment analysis is noted in that these traditional methods do not necessarily capture the entire impact of new technology adoption (Jurison, 1996; Ford 1996). Kim and Sanders (2002) continue to state that traditional approaches have failed to address important issues such as IS impact on strategic direction and less tangible IT benefits of improved information capability for management decision making, more timely service delivery and service quality.

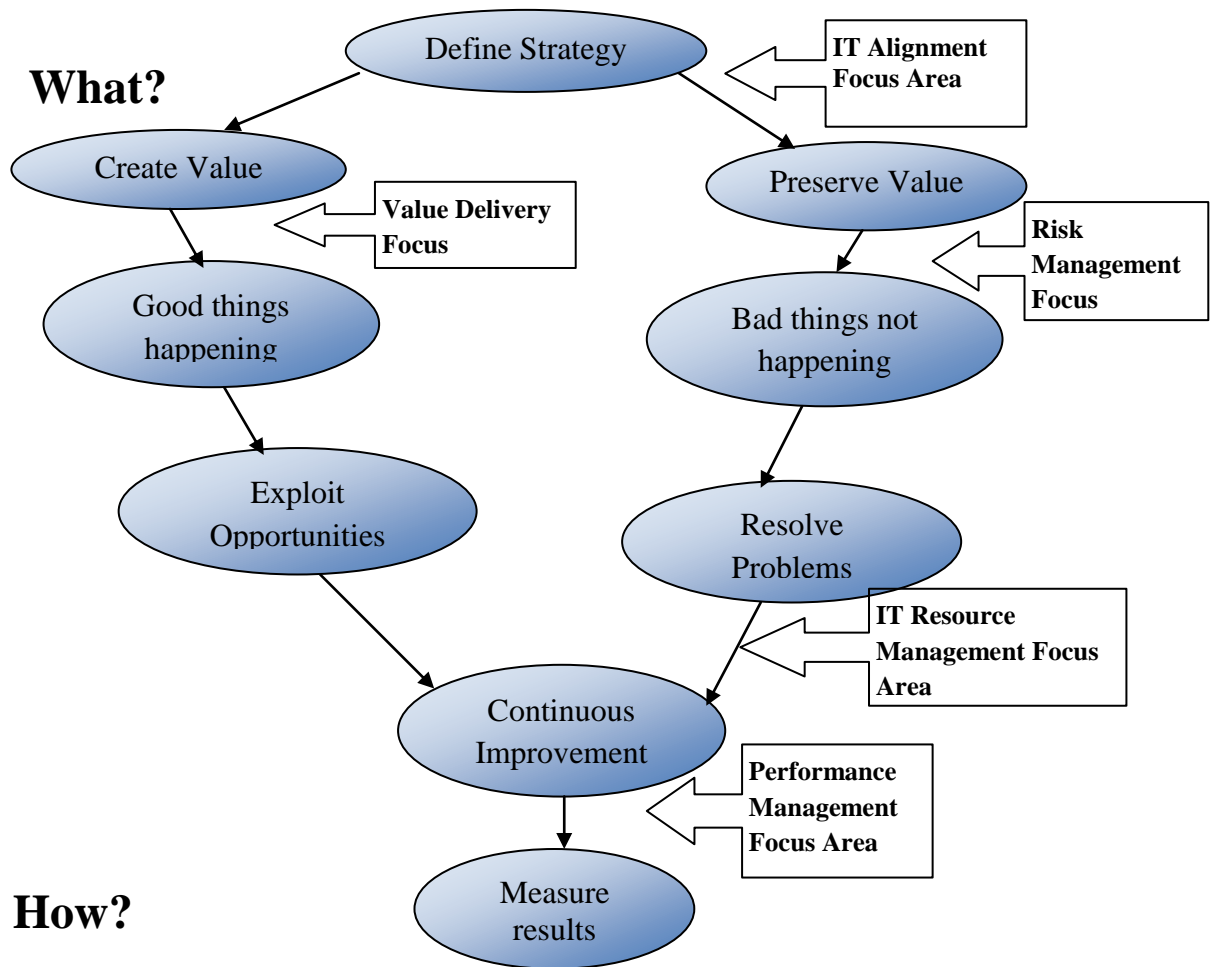
Jurison (1996) contributes by stating that the existing performance measures based on management accounting measures (return on investment – ROI; return on assets – ROA; revenue growth rate, and indirect labour) can only capture the objectives of a limited number of stakeholders. For measuring benefits at a business unit level they have certain advantages. The primary advantage is that they are standard business measures, well understood and accepted by managers. They are also part of the financial reporting system, making them easy to accumulate and simple to apply. However, because the emphasis of these measuring tools is on the financial aspect, they cannot capture those benefits outside the accounting system. Management accounting measures are internal; hence it is noted that they fail to recognize many types of spillover effects beyond the boundaries of the organization (Jurison, 1996; Ford, 1996). Therefore, Jurison (1996) purports that assessments based solely on standard financial measures are likely to understate the full value of IT and lead to poor investment decisions.

Kim and Sanders (2002) illustrate that organizations using return on investment, equity and/ or total assets are likely to underestimate the true profitability for a new IT investment and overestimate the profitability of old ones. This is primarily because these methods employ the book value for assets and inflated values for revenues. This can result in eliminating major technological breakthroughs because the benefits from IT investments are invisible and would not be captured by traditional methods and eventually these innovations would not pass the Net Present Value test (Hinton and Kaye, 1996). As the failure of traditional measuring methods has been noted and also the general complexities of measuring IT value, the Information Technology Governance Institute (ITGI) has created a framework (Val IT) which assists organizations to maximize value from IT investments.

### **3.3.2 Val IT framework**

The Val IT framework is an initiative of the ITGI, one of many frameworks which are a result of research work done by the IT Governance Institute. It was created to help organizations to optimize creation of value from IT investments (ITGI, 2008a). Val IT framework provides “specific guidance enabling organizations to optimise the realisation of value from IT investment.” (ITGI, 2007:12). The framework focuses on the investment decision and realisation of benefits while managing risks; hence its focus is on enabling an organization to invest in the right technology and ensure that the expected benefits are realised from an investment.

The Val IT framework does not work in isolation but complements other frameworks such as CobiT (ITGI (2008a). Figure 3.3 shows the processes that the ITGI have identified in value creation and preservation. The essence of the Val IT framework is that the value that IT delivers should be aligned with the values on which business is focused (ITGI, 2008b). When such values are identified, an organization is able to define a strategy to create value and also exploit opportunities that can lead to optimization of value; while on the other hand measures are put in place to preserve and control processes that could go wrong.



**Figure 3.3: Value Creation and Value Preservation – (ITGI, 2007:14)**

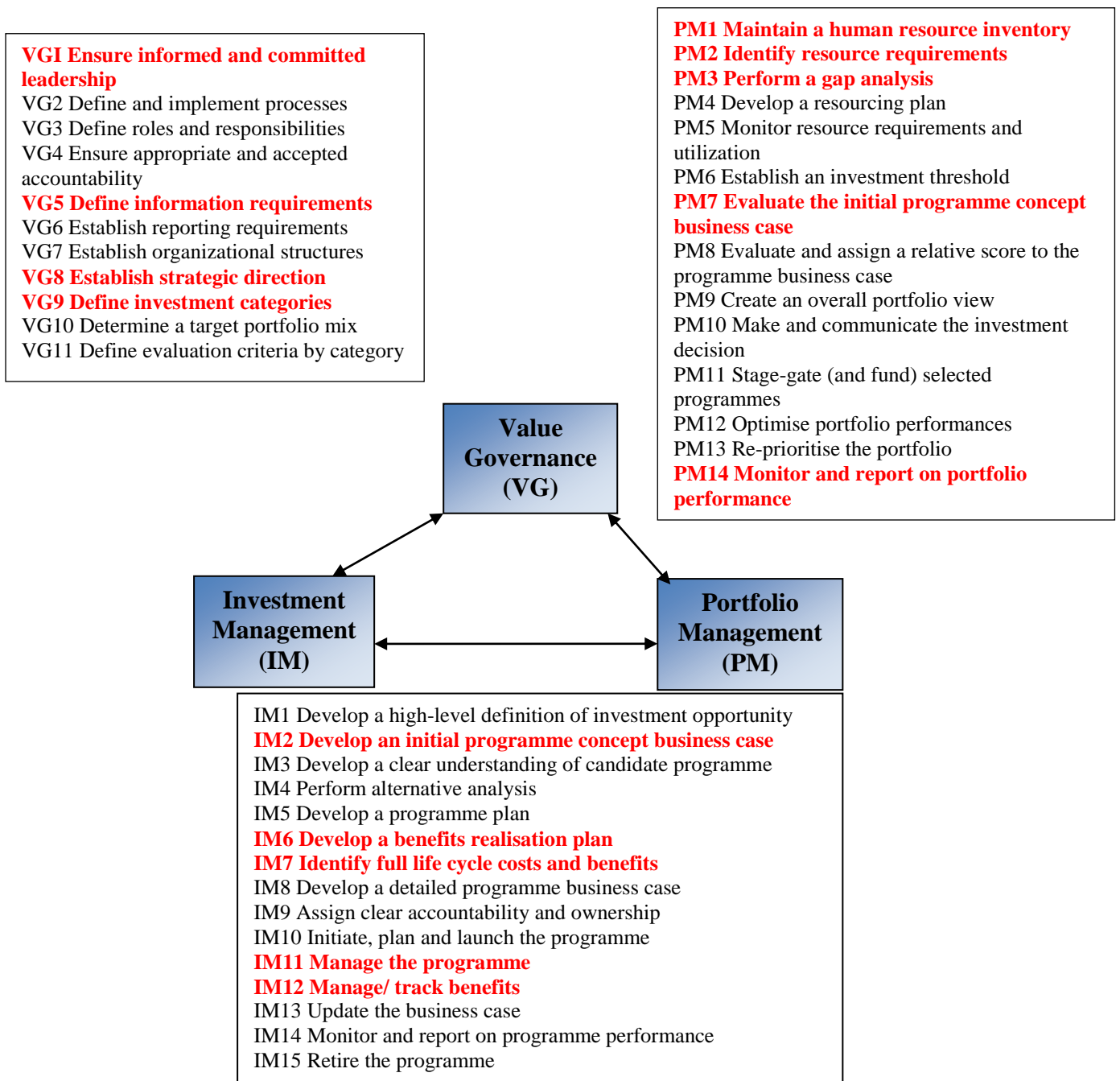
It has been established that the primary focus of the Val IT framework is management of investments by ensuring the creation of value and by managing risks. In order for organisations to achieve this, the framework assists in the understanding of costs, risks and benefits of investment decisions. Such an understanding aids in the selection of IT investment projects and also increases the chances of success in the selected IT investment. As the framework ensures that the selected investment project is valuable, it also emphasises reduction of costs and reduction of risks by encouraging constant monitoring of projects (ITGI, 2008a). To achieve the goals stated above, organizations have to understand the Val IT prescribed principles and domains of the framework.

### 3.3.3 Val IT principles and domains

ITGI (2008b) states the VAL IT principles are as follows:

- a) IT enabled investments will be managed as a portfolio of investments;
- b) IT-enabled investments will include the full scope of activities that are required to achieve business value;
- c) IT-enabled investments will be managed through their full economic life cycle;
- d) Value delivery practices will recognize that there are different categories of investments be evaluated and managed differently;
- e) Value delivery practices will define and monitor key metrics and will respond quickly to any changes or deviations;
- f) Value delivery practices will engage all stakeholders and assign appropriate accountability for the delivery of capabilities and the realization of business benefits; and
- g) Value delivery practices will be continually monitored evaluated and improved.

The principles above assist organizations in creating value management processes which ensure that realization of value from IT is maximized. These principles have to be applied to three Val IT domains. The domains are, Value Governance, Portfolio Management and Investment Management (ITGI, 2008b). Each domain has processes within it as shown in Figure 3.4. The highlighted processes are the ones whose primary focus is value delivery. These processes are activities which can take the form of an input, manipulated into an output and outputs which can form inputs of other processes (ITGI, 2008b). These domains are essential to fulfilling the Val IT value management goal of enabling the organization to realise optimal value at an affordable cost with an acceptable level of risk from IT-enabled investments.



**Figure 3.4: Val IT Domains and Supporting Practices, ITGI, (2008c:11)**

The study of the Val IT framework shows that if organizations can adhere to the practices, domains and processes defined above, more value will be realized from IT investments. Even though the framework is not industry specific nor organization-size related, it is important to note that SMEs, in particular Boutique Hotels can also adopt the framework in order to optimize their IT investments. The framework can be adopted and customized to suit the needs and nature of any organization. It is acknowledged that “realising business value is not about

acquiring technology, but about using IT in conjunction with associated changes in the nature of the business, business processes, individuals' work and competencies, and organisational structures" (ITGI, 2008c:14). In summary, the challenges that SMEs, specifically Boutique Hotels face in terms of use and management of IT investments, can be reduced by the effective implementation of the Val IT framework. For Val IT framework to work effectively, one has to study the CobiT framework. As the Val IT framework focuses on investment decisions, the CobiT framework focuses on what is required to achieve adequate management and control of IT.

### **3.4 CobiT's Maturity model**

The CobiT maturity model has been chosen for this study as it is internationally recognized and is applicable to many organisations. The CobiT guidelines incorporate other major global IT-related standards, practices and frameworks, making CobiT a reputable framework. These are the Committee of Sponsoring Organisations (COSO) and the Office of Government Commerce (OGC).

The CobiT framework provides a comprehensive outline for the management and delivery of high-quality information technology based services (ITGI, 2007). The main premise of CobiT is to, "provide the information that the organization needs to invest in and manage and control IT resources using a structured set of processes to provide the services that deliver the required organization information" (ITGI, 2007:10). The definition above shows that CobiT is concerned with the creation of a platform on which investment decisions are made and managed.

The ITGI (2007) notes that CobiT enables the development of clear policies and ensures that best practices are followed for IT control in an organization. According to Hardy (2006), the CobiT guidelines are recognized standards which can provide an organization with the means of achieving effective IT governance. It sets best practices for the means of contributing to

the process of value creation. IT investments have little impact unless they are accompanied by first-rate management practices and those organizations that combine good management practices with IT investments, perform best of all.

The CobiT framework is applicable on any of the five focus areas of IT governance as illustrated in Figure 3.1. It is important to note that the implementation of the CobiT framework starts with IT strategies and business strategies being aligned. To fully understand the CobiT framework, its guidelines, categories of resources and domains will be studied in the sections below.

The CobiT guidelines have three dimensions which are Information Criteria, IT Resources and IT Processes. CobiT has set criteria that information required by an organization should meet. This set of requirements is also known as business requirements for information. These are requirements are as follows (ITGI, 2007):

- *Compliance* – information has to comply with laws, regulations and contractual arrangements,
- *Availability* – information should be available when required by a business process,
- *Integrity* – information should be accurate and complete, and valid in terms of the organizational values and expectations,
- *Confidentiality* – concerns the protection of sensitive information from unauthorized disclosure,
- *Reliability* – relates to the provision of appropriate information for management to operate the entity and exercise its fiduciary and governance responsibilities,
- *Efficiency* – relates to the optimal use of resources by an organization to ensure the availability of information,
- *Effectiveness* – deals with information being relevant and pertinent to the business process and being delivered in a timely, correct, consistent and usable manner.

It is important to note that without the right information Boutique Hotels will select the wrong investment decisions, thus fail to derive value from IT investments. According to Levy and Powell (2005) SMEs tend not to understand the strengths and weaknesses of the relationship between information and good information systems. The failure to understand the importance of information has resulted in SMEs having a short strategic horizon. This means that they have little interest in information that provides input for longer-term strategic thinking.

These information requirements are complemented by the categories of resources that have been prescribed by CobiT. The CobiT categories of resources intended to manage the delivery of information are as follows (ITGI, 2007):

- *Applications* – these are the systems and procedures which are required to process the information,
- *Information* - this refers to the data forms of the information systems, such as input, processes and output,
- *Infrastructure* – includes hardware, software, networking, multimedia just to mention a few. These allow applications to be processed,
- *People* – the individuals required to plan, organize, acquire, implement, deliver, support, monitor and evaluate the information systems and services.

These categories of resources emphasize that technology cannot be viewed in isolation when determining value from IT. Salmela (1997) has defined the quality of systems as a product of the users of the system, the work for which the technology is required. In addition, the integration of the infrastructure, applications and people is emphasized in the TTF model discussed in Chapter 2. The TTF model prescribes that value is achieved when there is a balanced interaction between the technology and the task. This balance leads to the selection of suitable users of the technology (McGill and Klobas, 2009).

The information requirements and categories of resources are applied on CobiT domains. The primary focus of CobiT domains is on delivering the technology capability that the organization needs by;

- a) *Planning and Organizing* the organization IT resources (PO),
- b) *Acquiring and Implementing* through a portfolio of technology projects the technology capabilities required to support the change programmes and the ongoing operations of the organization (AI),
- c) *Delivering and Supporting* those technology capabilities along with existing services, systems and supporting infrastructure (DS) and
- d) *Monitoring and Evaluating* IT performance (ME) (ITGI, 2007).

The process defined by CobiT consists of various activities and tasks. These activities and tasks are defined in 34 high-level control objectives. Control objectives are statements indicating the desired result expected from the implementation of control procedures with an IT activity (ITGI, 2007). These high-level control objectives are broken down into 318 detailed control objectives.

As discussed earlier, there are five focus areas of IT governance as depicted in Figure 3.1. This study will focus on the Value delivery focus area; thus the control objectives to be included in this study are those whose primary focus is Value Delivery. These control objectives are taken from the four domains of the CobiT framework, as value creation is a continuous process which involves all the CobiT domains in an organization. Figure 3.5 shows the four CobiT domains and the 34 high-level control objectives. There are ten high-level control objectives applicable to this study and they are as follows:

- Define a Strategic IT Plan (PO1)
- Manage IT investment (PO5)
- Manage quality (PO8)
- Acquire and maintain technology infrastructure (AI3)

- Manage changes (AI6)
- Ensure continuous service (DS4)
- Educate and train users (DS7)
- Manage data (DS11)
- Monitor and evaluate internal control (ME2)
- Provide IT governance (ME4)

There are 49 detailed control objectives that relate to the high-level objectives noted above. It is important to note that since there are many high-level objectives, an analysis is carried out to extract the most applicable ones. This is discussed in Chapter 6.

The research project will show in following sections how CobiT and VaI IT frameworks control objectives can be customized to suit the nature of organisations, as this was done to suit SMEs, specifically Boutique Hotels in Buffalo City. It is not paramount for an organization to implement all 34 control objectives without assessing the readiness, size and responsiveness of the organization to that level of implementation.

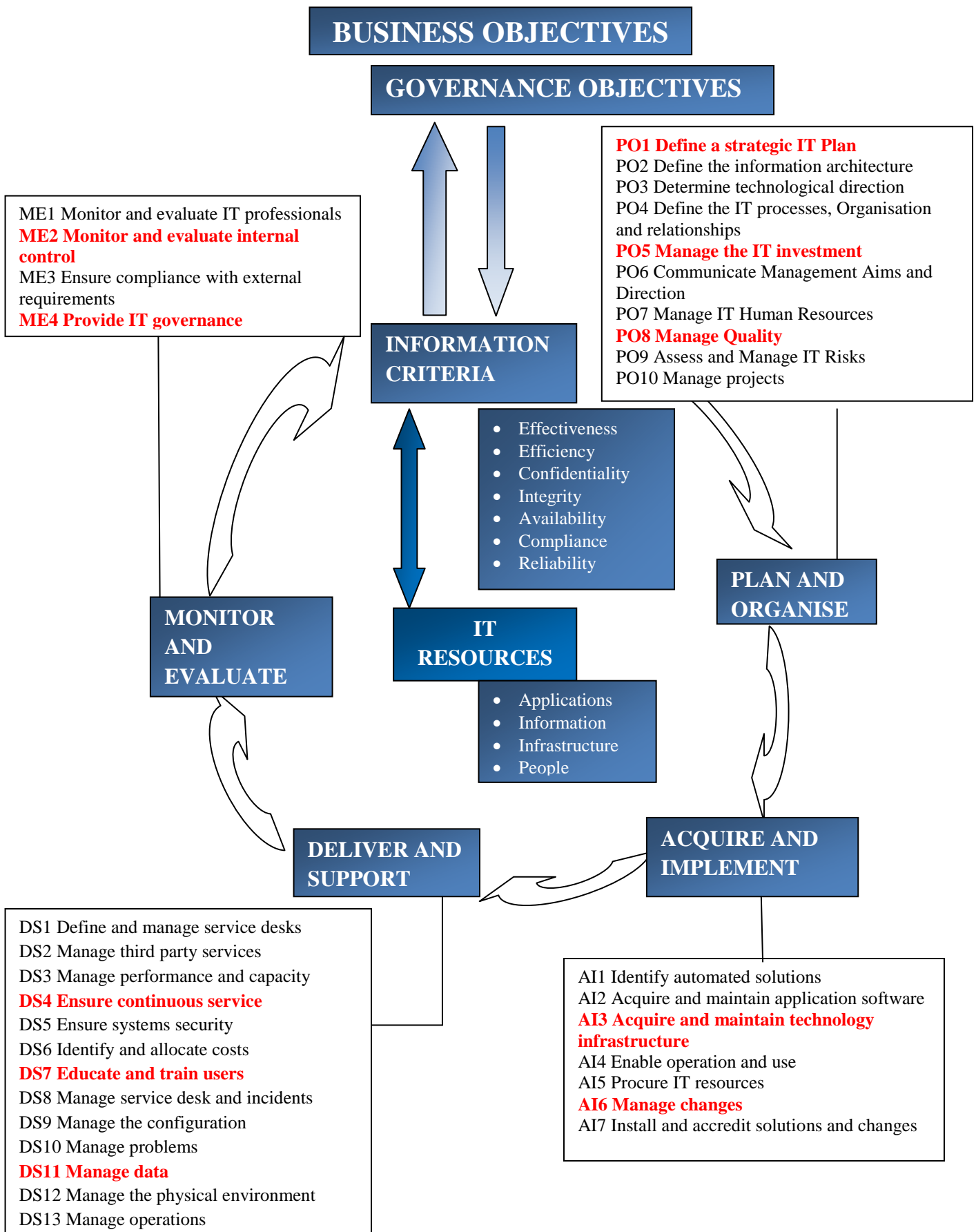


Figure 3.5: Overall CobiT Framework (ITGI, 2007:25)

In order to capture and measure the level of adoption of IT governance procedures, processes and principles, the CobiT framework makes use of maturity models, critical success factors, key goal indicators and key performance indicators. This research will focus on the maturity model. Maturity models measure the process capability in an organisation and also enable assessment of gaps.

### **3.4.1 Evaluation of maturity model**

It is important for an organization to understand and measure the status of their IT systems (ITGI, 2007). The CobiT maturity model has set levels from which an organization can identify the maturity of its strategic choices and governance practices. This model allows organizations to see where they are and then identify what they need to do to improve. ITGI (2007) highlights that a maturity model allows an organization to identify its actual performance, the current status of the industry, the organization's target for improvement and the required growth path to close the identified gap. Maturity modelling enables gaps in process capability to be identified and demonstrated to management. Action plans can then be developed to bring these processes up to the desired capability target level (ITGI, 2007).

The maturity levels proposed in the CobiT maturity model are designed as profiles of IT processes that an organization would recognize as descriptions of possible current and future states. The model proposes six levels of IT governance maturity as follows (ITGI, 2007):

- 0. Non-existent* – organizations on this level lack any recognizable processes. Such organizations do not recognize that there is an issue to be addressed; therefore management processes are not applied at all.
- 1. Initial* – in this level, there is an indication that an organization recognizes that issues exist that need to be addressed. Processes in this level are ad hoc and disorganized.
- 2. Repeatable* – processes have been developed to the stage where similar procedures are followed by different people who undertake the same task. There is no formal

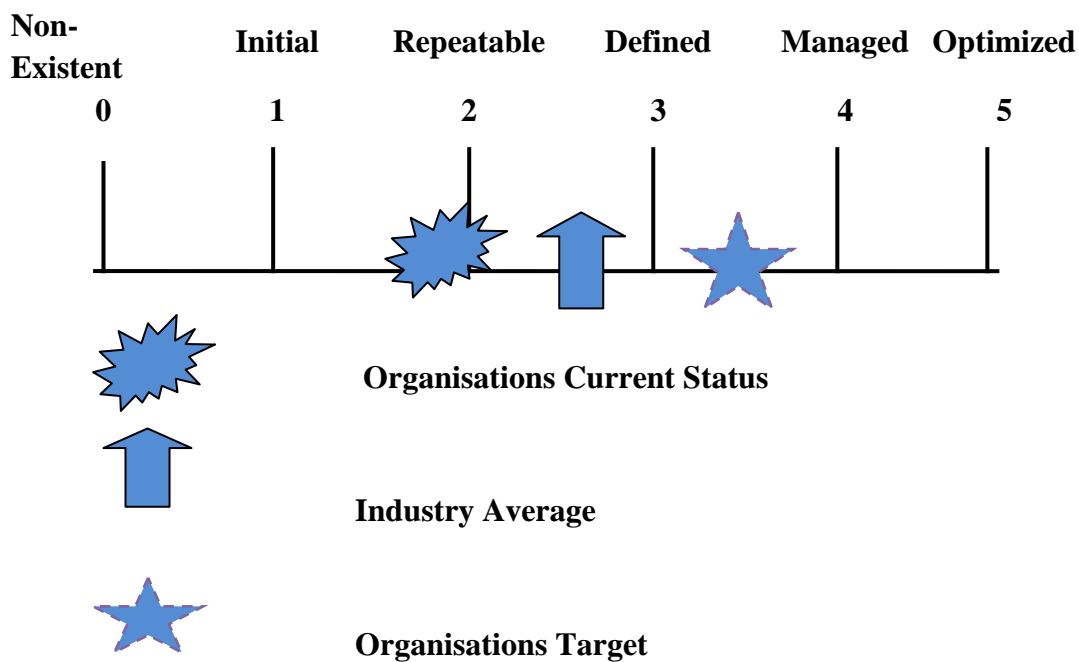
training or communication of standard procedures; the responsibility is left to the individual.

3. *Defined* – procedures have been standardized and documented and communicated through training. At this stage, it is mandated that these processes should be followed; however deviations may not be detected.

4. *Managed* – management monitors and measures compliance with procedures and takes action where processes appear not to work effectively. These processes are under constant improvement and provide good practice.

5. *Optimized* – processes have been refined to a level of good practice based on the results of continuous improvement and maturity modelling with other organizations.

The processes are even automated.



**Figure 3.6: Levels of CobiT Maturity Model (ITGI, 2007:19)**

The scales show in Figure 3.6 that an organization should ensure that both IT and business should be involved in the assessment of the organisation’s status. The involvement of the business in the assessment of the IT maturity stage ensures that an agreed maturity level is reached and strategies and goals are crafted to achieve the set maturity level. Thus, Boutique Hotels can use the CobiT maturity model to assess their actual performance, the current status

of the industry and also set targets for their process improvement. More importantly, the study of the maturity model will assist these hotels to identify ways to close the gap that exists between their current status and the desired status. For an organization to reach its desired level, all changes should be taken into account to preserve the values already established and to create a platform from which new opportunities can be exploited in value realization.

### **3.5 Conclusion**

IT governance has been illustrated as a set of policies and processes that organizations can adopt to derive maximum value from IT investments. When organizations implement good IT governance practices, IT is aligned with business goals, thereby resulting in the organization deriving IT value. IT governance was explored by explaining its five focus areas, which are strategic alignment, value delivery, resource management, risk management and performance measurement. The focus of this study is the Value Delivery focus area.

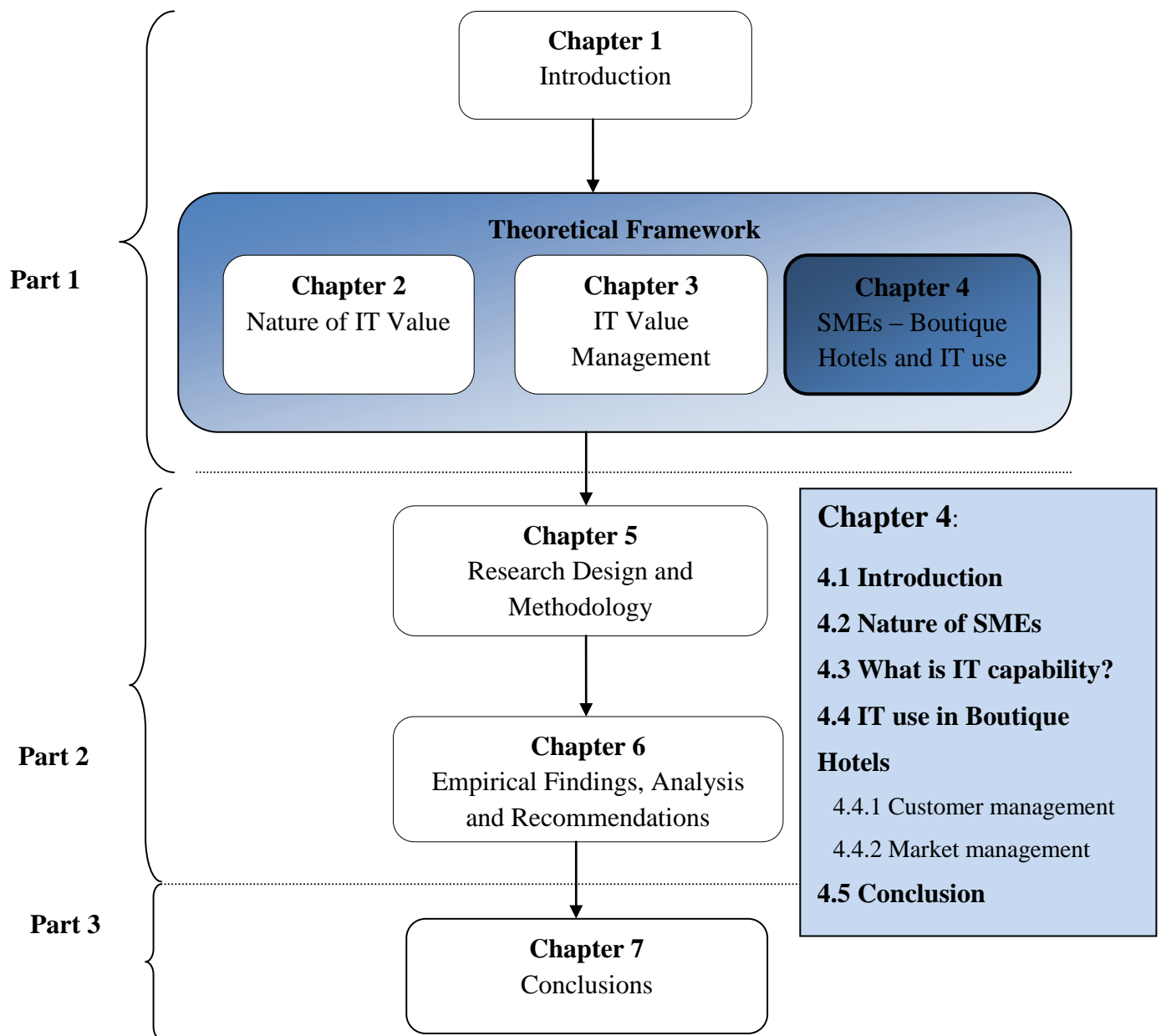
This chapter highlighted the way organisations manage IT value. In this regard, the traditional investment measuring methods were discussed and their failure to measure the intangible value of IT was highlighted. Thus, in response to the challenges most organizations face in managing and measuring IT value, the Val IT and CobiT frameworks were discussed. These are frameworks with prescribe processes, domains and qualities of information which enable organizations to use IT investments and resources optimally. The frameworks' strong point is their ability to assist organizations to measure the value of IT investments, a measurement that traditional investment measuring methods have failed to do.

The CobiT Maturity model is reflected as a model which allows organizations to assess their status as far as adoption of IT governance is concerned and also help such organizations assess their current industry level, only if it is known. It has been established that IT governance does not favour a specific industry; thus Chapter 4 will study SMEs and in particular Boutique Hotels, due to their uniqueness. It will specifically discuss the areas in which IT is applied by

Boutique Hotels. Chapter 4 will also highlight how the IT capability of an organisation influences its adoption and use of technology, thus affecting its ability to derive value from IT.

# CHAPTER 4

## SMES – BOUTIQUE HOTELS AND IT USE



### 4.1 Introduction

Generally, an SME is defined as an organization which fits into the 1-100 employees category regardless of whether it is small, medium or micro. Ayyagari, Beck and Demirgüç-Kunt (2005) state that SMEs are defined as formal organisations and are different from informal organisations. It is important to note that in South Africa small organisations are also referred to as Small Micro and Medium Organisations (SEDA, 2006). In this study, these organisations

will be referred to as Small and Medium Enterprises (SMEs). Strotmann (2007) states that the size of the organisation is measured by its employment, its initial amount of capital or its turnover in the first year. Thus, for purposes of this study, the size of an SME will be determined by its number of employees and the number of rooms a hotel has. Financial turnover and capital investments were not considered.

This chapter will focus on IT use in Boutique Hotels. Boutique Hotels are organisations which are not part of a group or chain of hotels. The hotel establishment cannot have multiple locations; thus it should be found only within the Buffalo City Municipality geographical boundaries. The organisations used in this study are hotels which have more than 15 rooms and employ at least 10 people. The term Boutique Hotel will be used to include establishments which are also termed Bed and Breakfast establishments, provided they fit the description and other criteria.

This study acknowledges that effective IT investment management results in organisations deriving value from IT. The absence of this management is understood to worsen the competitive position of an organisation (Buhalis, 1998). However, it is important to note that SMEs in general possess characteristics which influence their adoption, use and management of IT (Levy and Powell, 2005). These characteristics will be discussed in this chapter. Furthermore, this chapter will reflect on the IT capabilities and competencies within organisations, specifically SMEs. IT capability is the ability of an organization to align its technology to its business performance while IT competencies are the skills and resources an organization possesses in order to maximise its use of IT.

The study of the IT capabilities and IT competencies is necessitated by an understanding that only a balanced relationship between IT and the people who use the IT, provides flexibility and maximisation of investments (Peppard and Ward, 2004). Thus, the chapter will examine the qualities an organisation should possess in order to derive value from IT, hence improving IT

capabilities and IT competencies. In addition, the use of IT by Boutique Hotels will also be studied in order to understand the way they derive value from their investments.

Therefore, this chapter aims to illustrate the nature of SMEs by highlighting their unique characteristics which hinder effective implementation of IT and use of IT. The understanding of the nature of SMEs in general will lead to a clearer understanding of how Boutique Hotels use IT and how they derive value from IT investments. The analysis of how Boutique Hotels use IT will be amplified even more by an in-depth study of the IT capabilities and IT competencies of SMEs in general.

## **4.2 Nature of SMEs**

It is important to note that SMEs possess unique characteristics which can hinder the effective implementation of invested IT. The prevalence of these characteristics do not necessarily mean that the SMEs and Boutique Hotels in particular are not profitable, but serves to highlight that there are challenges in the way SMEs maximise investments in IT. IT use, investment and implementation is influenced and determined by the nature of these organizations. In addition, these unique characteristics influence the way SMEs identify, manage and use IT in their business operations.

Ham, Kim and Joeng (2005) suggest that there is an increasing reliance on IT systems and this increase is expected to influence operations significantly in the hotel industry. They envisage that the increased reliance on IT will result in decreased costs, greater productivity and increased revenues especially in the hotel industry, thus improving customer service and business operations. This study will analyse if Boutique Hotels in Buffalo City are deriving the benefits from IT as mentioned above. In addition, the identification of characteristics that hinder the effective use of IT will enable these hotels to implement changes which will result in them effectively using IT and managing the IT value that will be derived.

An informal content analysis of the characteristics of SMEs was conducted as shown in Table 4.1. The discussion of these characteristics does not suggest that these are the only ones that affect SMEs, but only highlights those applicable to this study.

**Table 4.1: Characteristics of SMEs and supporting authors**

		Uncertainty of environment	Owners IT knowledge and IT adoption	Short term vs. Long term planning	Cost reduction	Lack of resources	Absence of management structure	Customer pressure	Flexibility	IT related innovation	Challenges in creating value
	<b>Researcher</b>										
1.	Buhalis (1998)								X		X
2.	Dehning et al. (2005)		X								X
3.	DeLone (1988)					X					X
4.	Dierckx and Stroeken (1999)	X								X	X
5.	Fink (1998)		X							X	X
6.	Gregor et al. (2006)	X									X
7.	ITGI (2008a)		X	X		X	X			X	X
8.	Jeon et al. (2006)		X							X	
9.	Levy and Powell (2005)	X	X	X	X	X	X	X	X	X	X
10.	Lin and Shao (2006)					X				X	X
11.	Meng and Lee (2007)					X				X	X
12.	Neirotti and Paolucci (2007)	X		X		X					
13.	Peppard and Ward (1999)			X		X	X				X
14.	Peppard and Ward (2004)		X			X			X		X
15.	Raz and Goldberg (2006)						X				
16.	SEDA (2006)									X	
17.	Orfila-Sintes and Mattsson (2009)									X	
18.	Tiernan and Peppard (2004)										X
19.	Ward and Peppard (1996)					X	X			X	

The characteristics identified in Table 4.1 are discussed as follows:

#### 4.2.1 Uncertainty of environment

SMEs are usually characterized by a high level of environmental uncertainty, including the IT environment. Neirotti and Paolucci (2007) agree by stating that these uncertainties are due to

the pervasiveness of IT in the organization, its rapid evolution, and the multiplicity of the fields now under control of IT managers. Levy and Powell (2005) further state that because of the uncertainty of the environment that SMEs are in, they lack the ability to respond to the changes.

Levy and Powell (2005) suggest further that the competitive environment in which SMEs operate affects their chance of survival. Most researchers agree that plans developed by SMEs are to ensure survival of the business (Levy and Powell, 2005; Neirotti and Paolucci, 2007; DeLone, 1988; Gregor et al. 2006). This type of planning is due to high market uncertainty in most SME markets as they tend to have a smaller share of the market or tend to rely on one or two major customers for business. Furthermore, Levy and Powell (2005) state that market uncertainties lead to the fear associated with lack of income or of missing a business opportunity. Thus, such uncertainties affect investments in IT and adoption of the right technology and systems by SMEs.

#### **4.2.2 Owner's IT knowledge and IT adoption**

The adoption of IT in any organization will be determined by the individual characteristics of the CEO, attitude to IT, innovativeness and IT knowledge (Levy and Powell, 2005; Jeon et al. 2006). Thus an SME can successfully implement IS provided the owner appreciates the value of IT. The lack of knowledge of IT by owners often leads them to look outside the organization for IT help.

In addition, because of the lack of understanding of the IT needed for the organisation, SME owners tend to underestimate the effort and time required to implement a system. Thus, the adoption of IT in such instances is driven by the perceived benefits to the organization, particularly competitor pressure and this leads to little consideration of issues such as time, support and maintenance of the system (Levy and Powell, 2005; Fink, 1998). It is noted that this leads to the SME having a number of incompatible systems that are difficult to network.

### **4.2.3 Short term plans vs. long term planning**

According to Levy and Powell (2005), SMEs are reluctant to commit to long term strategies. Most SME strategies are usually focused on the medium term rather than long term because they tend to focus on operational planning, the main objective being one of providing the product or service efficiently and effectively. Thong (2001) states that where planning is carried out the focus is on systems to improve productivity, which is in line with Levy and Powell's (2005) position. The loss of income due to lack of productivity is what SMEs guard against; hence most plans are focussed on avoiding loss of income instead of improving business operations and processes (Peppard and Ward, 1999; Levy and Powell, 2005).

As stated earlier the owner's attitude to IT influences IT adoption in the organisation; the failure of SMEs to plan the introduction and exploitation of new technology is due to management limitations (ITGI, 2008a; Dehning et al. 2005).

It is important to note that the owners' knowledge of the market is critical to successful achievement of business strategies. Therefore, the effective adoption and use of technology is determined by the type of planning in which the SME engages.

### **4.2.4 Cost reduction**

According to Levy and Powell (2005), the main objective of most SMEs is to reduce costs and to ensure survival; thus IT is only used when its effectiveness has been established. The need to ensure survival within SMEs leads them to be generally preoccupied with day to day viability and not focus on the IT advantage of improving productivity, business processes and customer interaction.

This may be one of the reasons SMEs are reluctant to invest in management IT but in production IT as they do not see the direct benefit of management systems to the organization, whereas production systems are recognised as essential (Levy and Powell, 2005).

#### **4.2.5 Lack of resources in SMEs**

Research has established that expertise in IT among employees, supervisors and top management are powerful determinants of IT adoption (Ward and Peppard, 2004; Meng and Lee, 2007). Levy and Powell (2005) also note that SMEs are found to be resource poor, not only financially but also in skills. This often leads to SMEs using external consultants to provide the skills they lack. In addition, staff in SMEs tends to be generalists rather than specialists (DeLone, 1988). SMEs have been found to lack knowledge about IT and this lack of understanding of IT is then cited as a reason for failure of small businesses to consider IT opportunities.

Due to a lack of IT expertise within SMEs, use is made of consultants. Levy and Powell (2005) and Fink (1998) propose that many SMEs owners are unsure about the quality of advice they receive from consultants; on the other hand, the role of consultants from whom advice is sought is not always understood by SMEs; in the end the SME owners do not know how to select a good consultant. These authors suggest that there is nervousness about IT consultants and vendors leading owners to look closer to home in developing their systems. The lack of IS expertise in small business managers and the lack of small business expertise in most external software/hardware consultants contribute to IS failure in SMEs. This lack of balance is noted as the reason SMEs tend to use relatives or friends to develop systems (Levy and Powell, 2005).

Lacity et al. (1994) in Peppard and Ward (2004) found that generally many organisations consider outsourcing partly for the access to greater IT knowledge that can be acquired through outsourcing. But the challenge such organizations face is in integrating this external knowledge with existing internal knowledge. This inability to exploit this combined knowledge base might explain why many organizations experience disappointing results from their outsourcing decisions.

Because of the need to ensure survival within SMEs and to reduce costs, management training is not often undertaken by SMEs. In all, Duh et al. (2006) in Neirotti and Paolucci (2007) notes that organizational human and technical impediments can make it difficult for an organization to develop an IT adoption model that can effectively support its business strategy. Such deficiencies affect their use and management of IT investments.

#### **4.2.6 Management structure**

Levy and Powell (2005) note the absence of management structures in most SMEs. Their research highlights that there is a difficulty among successful owner-managers to delegate once the organization grows. Thus, the owner-managers spend more time on operational work and less time on management issues. The absence of a management structure manifests in the loss of strategic direction as there is often an implicit strategy in the owner's head. Peppard and Ward (1999) suggest that the absence of good management structures leads to a widening gap between business goals and IT goals. This leads to less value being derived from IT, as technology use may not be maximised.

According to Ward and Peppard (1996), the lack of an organisational culture which views IT as an integral part of the organization leads to failure of IT projects. As a result, organisations fail to derive value from IT. An organizational culture is only developed by the management of that organization.

#### **4.2.7 Customer pressure**

For many SMEs the problem of selling to a single large customer causes difficulties in investing in IT as the customer sets both the price and quantity of goods (Levy and Powell, 2005). The difficulty in penetrating the market often leads a SME to rely on one customer. The disadvantage is seen in the lower margins that SMEs have when selling to a single customer. SMEs maybe find it difficult to build up sufficient funds to build new resources and may reduce their ability to take a strategic initiative. Therefore, customer pressure is a

deciding factor in attitudes to investment in management IT. The relationship between customer pressure and use of IT in Boutique Hotels will be highlighted in later sections.

#### **4.2.8 Flexibility in SMEs**

Levy and Powell (2005) note that SMEs have the reputation of being able to respond readily to customer's changing needs, thus they are flexible. As noted earlier, response to rapid change in the environment and in technology requires flexibility in strategic processes supported by flexible infrastructures (Buhalis, 1998).

It is suggested that SMEs are flexible because SME management structures tend to be flat and there is an absence of bureaucracy since management teams are small and most SME managers work together closely on a day to day basis (Levy and Powell, 2005; Ham et al. (2005).

Because of the flat management structures, SMEs are able to respond to the needs of their customers at a faster rate compared to bigger organisations. In the tourism industry, it is noted that flexibility is high as organisations have to respond to the ever changing needs of the tourists (Buhalis, 1998). It is important to note that the needs of the tourist are influenced greatly by the knowledge that is at the disposal of the tourist (Ham et al., 2005).

According to Winata and Mia (2005) because the hotel industry is people oriented, the success of an organization is measured by the creation of products or services that respond to the needs of the customer and personalise the service to customers. Therefore, SMEs are noted for their high levels of flexibility and willingness to change their business processes to suit the demands of a customer, as long as the survival of the organisation is ensured.

#### **4.2.9 IT related innovation**

SMEs can be more innovative than large organizations because they are less bound by bureaucracy and cumbersome organisation systems (Lin and Shao, 2006; Meng and Lee,

2007). However, it is noted that information systems adoption in SME is less likely to be successful when there is limited IT knowledge (particularly on the part of the owner).

Therefore, Orfila-Sintes and Mattsson (2009) note that in the hotel industry, innovation determinants are physical capacity, degree of use of the physical assets, and the additional services to accommodation. All these factors are in turn dependent on the vision and strategic planning of the owner of the organisation. Levy and Powell (2005) highlight that SME organisations are aware that they only stay in business through being seen by their customers to have both quality products and processes; thus SMEs tend to adopt and innovate ways to ensure that production and manufacturing run much easier.

#### **4.2.10 Challenges in creating value**

ITGI (2008a) highlights that creating IT-enabled value, by almost any measure, is not easy. Levy and Powell (2005) and ITGI (2008a) support this assertion that many organisations are hindered in creating IT enabled value because of the presence of the following symptoms:

- *Problems in delivering technical capabilities*—often an organization’s delivery processes and competencies within its IT function are not mature enough to effectively and efficiently deliver the technology capabilities needed to support business operations and enable business change;
- *Limited or no understanding of IT expenditures*—it appears decision makers can only estimate how much they are investing, what benefits they are gaining for the expense, and what the full business rationale for the commitment might be. There is often lack of transparency of IT expenditures and IT-enabled investments across all IT services, assets and other resources;
- *Business abdication of decision making to the IT function*—In most organisations, it has been noted that the role of the IT function, its responsibilities and accountabilities are not clearly defined. Thus, the IT function might end up determining which IT-enabled business investments to pursue and prioritising these

business investments based on the IT function's limited insights. Consequently, such a scenario results in the non-accomplishment of the business goals and objectives; the rationale for justifying the IT investments from the IT function's perspective, will not match what the business strategy will be;

- *Communication gaps between the IT function and the business*—Close collaboration between the IT function and other business functions is crucial to value creation. Due to a lack of communication, the IT function is relegated to the role of follower, instead of innovator, and is engaged in investment proposals too late in the decision making process to contribute significant value. ITGI (2008a) infers that in other cases, the IT function is blamed for not delivering value from IT-enabled investments—value that only other business functions, in partnership with the IT function, can deliver;
- *Questioning of the value of IT*— According to ITGI (2008a) even though most organizations continue to invest more in technology, the value there of is still questioned by the decision makers. Levy and Powell (2005) explain that the dominant focus in most organisations is merely on managing IT costs rather than understanding, managing and leveraging IT's role in the process of creating concrete business value. Raz and Goldberg (2006) agree that as IT-enabled investments increasingly involve significant organisational change, the failure to shift focus from cost to value will continue to be a major constraint to realising value from these investments;
- *Major investment failure*—the effects of project failures can be enormous—and highly visible. ITGI (2007) asserts that project cancellations can trigger unexpected ripples of impact across the business. Delays can cost millions and budget overruns can starve other projects of crucial resources.

It is clear that SMEs possess unique characteristics that influence the way technology is deployed and managed. The presence of some of these characteristics in an organisation

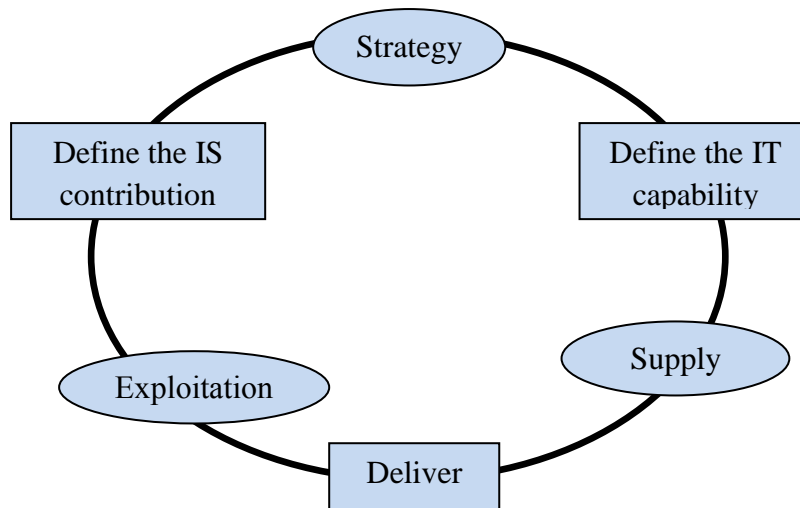
largely determines the magnitude of the use of IT in the business processes and also these characteristics determine the attitude the organisation has towards IT investment and IT-enabled change. The ability of an organisation to translate the investment in IT into a change in business processes and operations is defined as IT capability. Having stated the unique characteristics of SMEs, it is paramount that IT capability is defined.

### **4.3 What is IT capability?**

According to Peppard and Ward (2004) technology alone has no value but the business value derived from IT investments through business change and innovations, what organisations should strive for. The ability to derive value from the technology is dependent on the IT capability of the organisation.

Marchand et al. (2000) in Peppard and Ward (2004) defines IT capability as the ability of an organisation to align technology to its business performance. Kangas (1999) in Peppard and Ward (2004) further explains that IT capability refers to the strategic application of competencies within an organisation. Therefore, for Boutique Hotels to derive maximum value from IT, less focus should be on the technology itself, but more on the process of organising and managing information, systems and technology within an organisation.

In addition, support for this position is provided by Dvorak et al. (1997) in Peppard and Ward (2004), who state that what distinguishes organisations with high performance from IT, is not technical ability, but the way they manage their IT activities. IT activities are managed effectively when there is a management of skills and competencies within an organisation. Figure 4.1 illustrates how IT competencies which affect IT capability are positioned within an organisation.



**Fig 4.1: A framework for positioning IS competencies, Peppard and Ward (2004:176)**

In order for the framework above to be fully understood, a brief definition of terms follows (Peppard and Ward, 2004):

**a) IT capability**

“...is the ability to translate the business strategy into long term information architectures, technology infrastructure and resourcing plans that enable the implementation of the strategy (i.e. the IT strategy)” (Peppard and Ward, 2004:176).

**b) Exploitation**

“...is the ability to maximise the benefits realised from the implementation of IT investments through effective use of information, applications and IT services” (Peppard and Ward, 2004:177).

**c) Deliver solutions**

“...is the ability to deploy resources, implement and operate IS/IT business solutions, which exploit the capabilities of the technology” (Peppard and Ward, 2004:177).

**d) Supply**

“...is the ability to create and maintain an appropriate and adaptable information, technology and application supply chain and resource capacity” (Peppard and Ward, 2004:177).

**e) IS contribution**

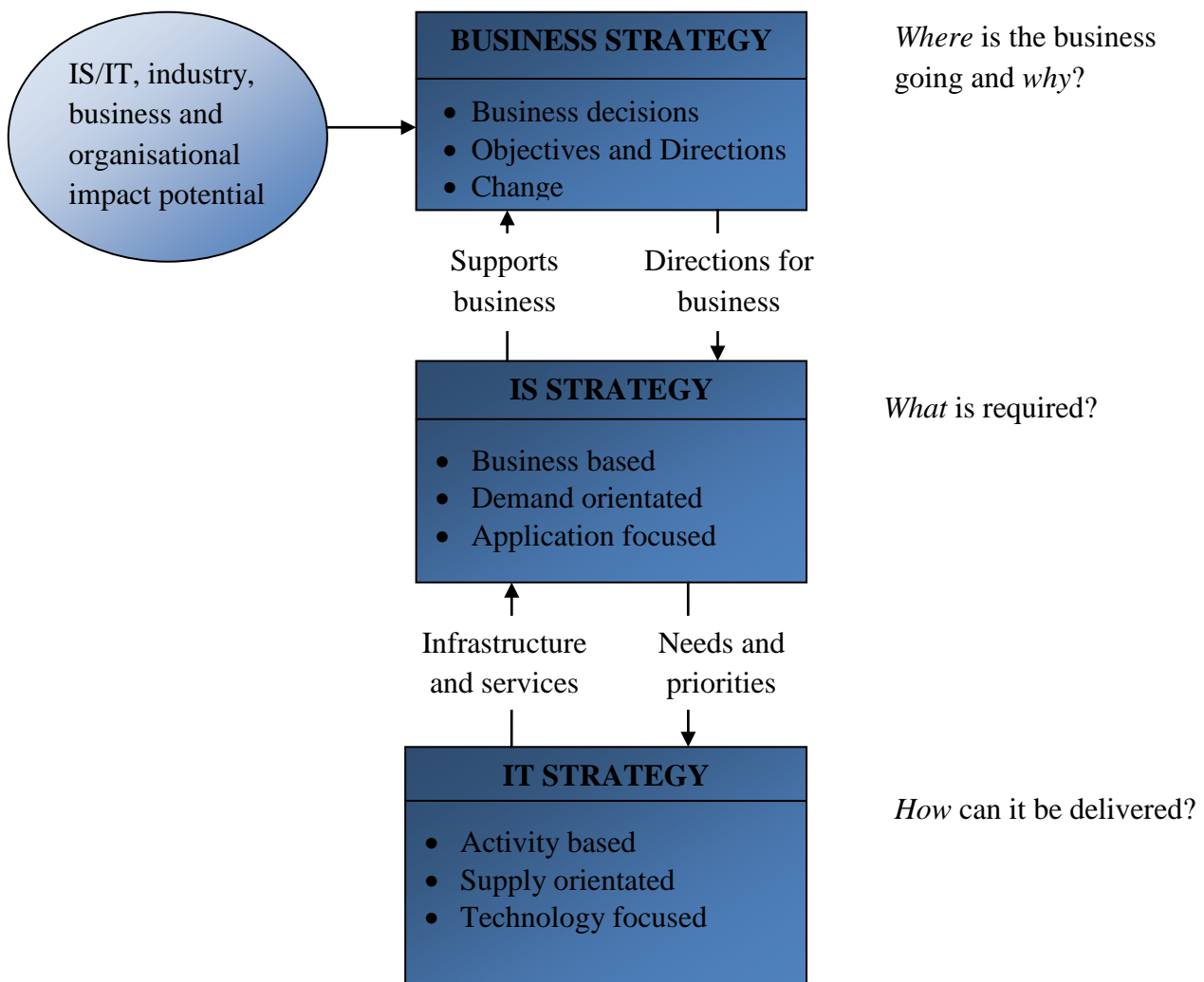
“...is the ability to translate the business strategy into processes, information and systems investments and change plans that match the business priorities (i.e. IS strategy)” (Peppard and Ward, 2004:177).

**f) Strategy**

“...is the ability to identify and evaluate the implications of IT based opportunities as an integral part of business strategy formulation and define the role of IS/IT in the organisation” (Peppard and Ward, 2004:176).

The framework referred to above illustrates that an organisation should position itself in such a way that it can channel its resources such that it achieves maximum benefits from investments and use of resources. It is important to note that resources will only be channelled effectively when an organisation has the right competencies in all its units; this improves its IT capability. The resources referred to in this instance are not only IT resources, but knowledge and skills within the IT function and other functions, as the IT function cannot work in isolation (Levy and Powell, 2005; Buhalis, 1998). As noted earlier, SMEs in general lack skills and resources thus investments in IT are not optimally used as the IT capability and competency levels of these organisations are reported to be low.

In order for IT capabilities and competencies to be fully understood, an examination of the relationship that should exist between business, IS and IT strategies is essential. Figure 4.2 depicts how business strategy influences the development of the IS and IT strategies.

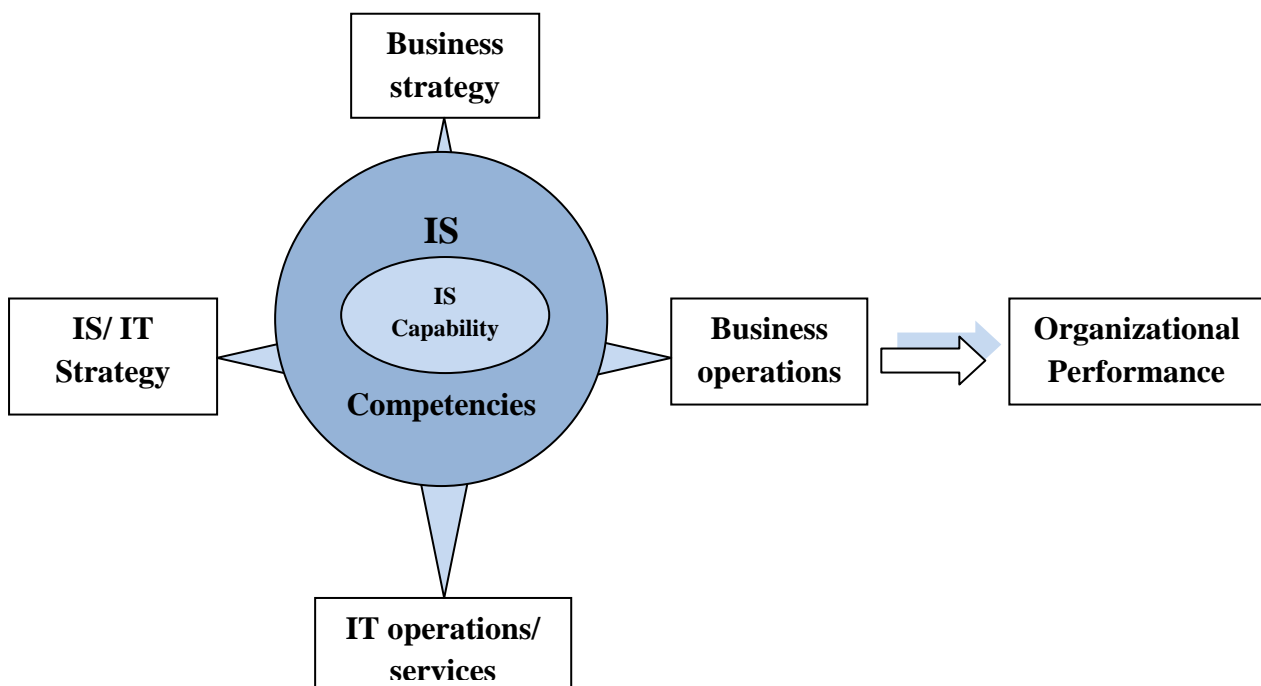


**Figure 4.2: The relationship between business, IS and IT strategies, (Ward and Peppard, 2002:41)**

Figure 4.2 illustrates that an organisation has to identify the potential impact that IS/IT could have on the organisation. Then an organisation can evaluate the information systems required to enable delivery of the strategy and lastly determine the best technologies to use in order to deliver the strategy. In essence, Ward and Peppard (2002) suggest that to derive value from IT, the IS and IT strategies should be developed from and incorporated into the business strategy, thus strengthening the IT capability of that organization.

According to Peppard and Ward (2004) the strength or otherwise of an organization's IT capability is ultimately only determined in the way IT impacts on business performance. Buhalis (1998) agrees by stating that the strength of IT should be measured by the re-engineering of business processes in an organisation and also the redesign of the organisational structures and systems.

Peppard and Ward (2004) illustrate the strength of IS capability in Figure 4.3.

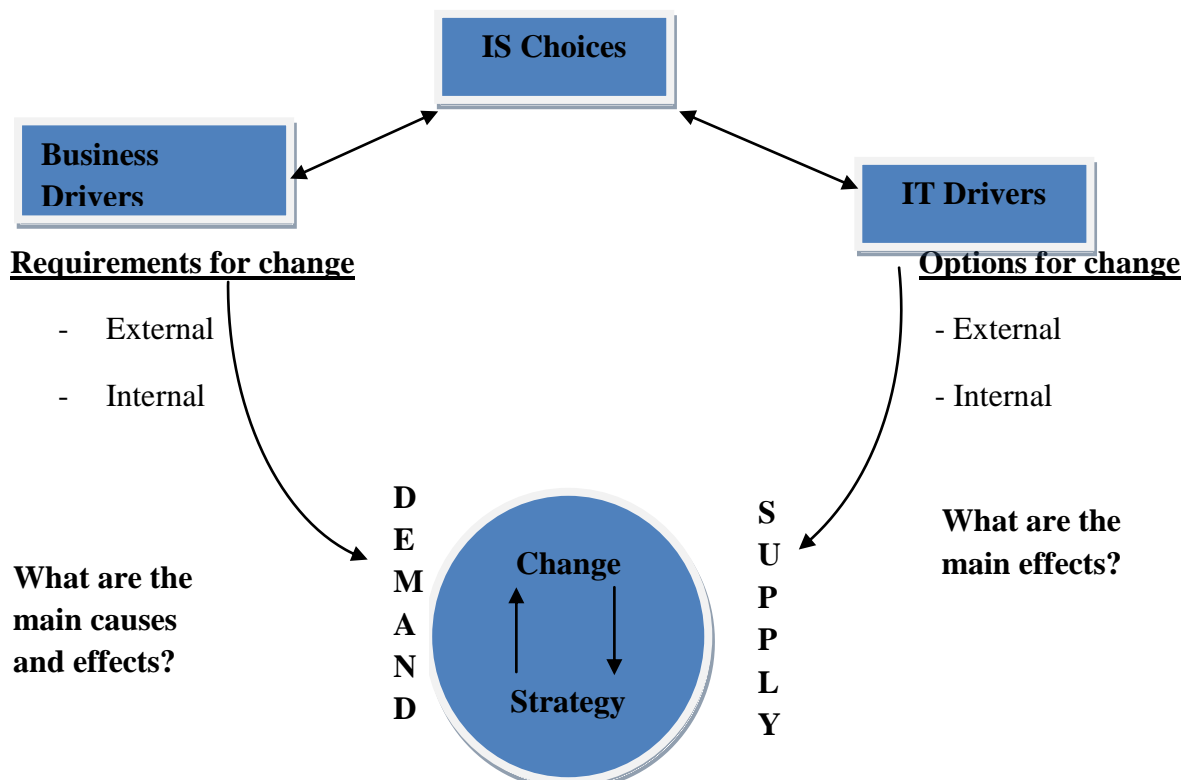


**Fig 4.3: The new IS/ IT alignment: IS capability and organizational performance (Peppard and Ward, 2004:187)**

Figure 4.3 shows that the IT capability of an organisation affects the business, IT strategies, IT operations and services and business operations. Peppard and Ward (2004) expand on this Figure by stating that IS capability is related to three attributes; an alignment of business knowledge with IS knowledge, a flexible and reusable IT platform, and an effective user-process. This means the IS capability of an organisation in turn is dependent on IS competencies. Without the right competencies, an organisation cannot connect its technology to its business operations to attain maximum business performance.

Figure 4.3 further illustrates that IT opportunities are incorporated into business strategy; the effectiveness of business operations is strengthened through systems and technology support; organisational performance is dependent on how well the IT infrastructure is designed and resourced and also the level of performance achieved by IT operations and the quality of its services also determine organisational performance (Peppard and Ward, 2004). It is important to note that a weakness in any area of IS competence directly or indirectly impacts on business operations and ultimately affects business performance. Thus, where there is poor strategic planning in both IT and business within a Boutique Hotel, IT will be of less value as its effect on business operations will be minimal.

The ability of an organisation to manage its competencies and to improve its IS capability is dependent on its effective balancing of the demands for business change and the supply of IT. According to Peppard and Ward (2004) this balance leads to the choices in IS/ IT that an organisation adopts. These IS/ IT choices are influenced largely by the competencies in an organisation and also its capability to use that particular IT to bring in IT-enabled change. Figure 4.4 illustrates the influences of business demand and supply of IT on IT choices in an organisation.



**Fig 4.4: IS strategy balances the demands for business change with supply of IT enablers. (Peppard and Ward, 2004:185)**

In most SMEs, business demand is largely influenced by one major customer, while the supply of IT is determined by the owner; thus when there is no balance between demand and supply, bad IT choices are made which leads to less value being derived from IT.

It is important to note that strategic decision making in an organisation largely influences the way an organisation develops competencies that will suit the demand from business and the supply from IT in order to improve IT capability. Buhalis (1998) notes that the fruitfulness of IT is possible when there is effective long term planning, innovative business process, re-engineering, top management commitment and training through the organisation. Demand and supply in an organisation are constantly changing; thus organisations have to constantly analyse competencies and evaluate if they still have the required skill to steer the organisation in the direction that leads to improved business processes and maximum use of IT.

In all, the lack of strategic planning, lack of understanding of IT and its potential and a lack of IT skills within SMEs leads to an imbalance in competencies within these organisations which in turn affects IT use. The continuous assessment of business and IT plans and the evaluation of skill resources within an SME will ensure consistent improvement of IT capability and competencies. This will enable the organisation to have the IT-enabled change it requires in its business operations.

The study on IT capabilities in organisations allows one to understand the following section, IT use in Boutique Hotels. These are hotels with unique characteristics; hence their use of IT will invariably depend on their capability to identify operational areas which can be enhanced by IT and also their ability to possess the right skills or competencies.

#### **4.4 IT use in Boutique Hotels**

Peppard and Ward (2004) note that most organisations in both service and manufacturing industries are dependent on IT. Ham et al. (2005) note the positive relationship between IT investment and business performance. Chathoth (2007) highlights that industries go through transformation with the introduction of new technology; specifically the service industry which changed significantly as organisations become more technologically oriented in their service production and delivery functions. Sikka (1999) further adds that technologies change the relationship between input and output. Technology can result in more output from less output thus proper implementation of IT systems can result in organisations changing the structures of a market as well as demand forces.

Before one highlights the way IT is used in Boutique Hotels, it is important to briefly reflect on the characteristics that differentiate organisations in the manufacturing and service industries. This differentiation will enhance the understanding of how IT is deployed in service industries, hotels in particular.

According to Winata and Mia (2005) the characteristics in Table 4.4 differentiate the manufacturing and hotel industry:

**Table 4.4: Differences in manufacturing and hotel industry (Winata and Mia, 2005:23)**

<b>Manufacturing Industry</b>	<b>Hotel Industry</b>
Managers do not usually deal directly with the consumers	Direct contact with consumers is the dominant characteristic. Managers are usually in direct contact with customers.
Demand for products is reasonably predictable as the external environment may not affect the industry directly and immediately.	The demand is difficult to predict. The external environment (i.e. political situation or economic condition) may directly and immediately affect the industry.
The product can be standardised.	The product or services are mainly customised, based on individual customers' preferences and needs.
The product can be inventoried or stored	The services and even many of the assets are perishable and time-based.
The production, delivery and consumption cycle of products is relatively long	The production delivery and consumption cycle of products and services is extremely short.
The level of interdependencies between various departments may be relatively low	The level of interdependencies between various departments is high, because the tasks are mainly customer-focused.
The response to customer's complaints may not be immediate	The response to customer complaints is mainly immediate.

The characteristics above show that IT will be applied in different processes in the hotel industry as business operations are different to those in manufacturing organisations. Furthermore, it is essential to acknowledge that IT is applicable to many processes in Boutique Hotels. However, this Chapter will focus on IT use in customer and marketing management.

#### **4.4.1 Customer management**

According to Winata and Mia (2005), the hotel industry is characterised by its people oriented nature, which has resulted in personalised services and direct contact of managers and employees with customers. It is noted that most of hotels within the industry emphasise the importance of high quality customer services. Thus, most investments in IT are meant to focus on increasing and managing the needs of customers. These customer needs are intangible as hotels are part of the service industry. Chathoth (2007) expands by adding that IT is therefore used to tangibilize the intangibles while meeting and exceeding guest expectations.

Buhalis (1998) states that IT adoption and investments in hotels is influenced by the demanding, sophisticated and knowledgeable customer, who is familiar with IT. This results in the customers demanding flexible, accessible and interactive products and services from hotel owners, hence influencing the IT in which hotels invest. Orfila-Sintes and Mattsson (2009) concur by stating that tourists have become more demanding when choosing from many alternatives. Thus, hotels are forced to invest in IT which ensures that customers/ tourists choose their organisation as a favourable destination.

In order to address the challenge of demanding customers in hotels, Buhalis (1998) suggests that hotels have to view IT as a tool that can be used to assist in the analysis of consumer needs through market research and loyalty/ partnership schemes. Improved access to information for customers can provide a hotel with the framework to offer personalised services at price levels comparable to those of standard packages. Systems used in such instances are customer relationship management systems (CRMs) which have revolutionised the hotel industry, customer patterns and trends are analysed and even predicted (Daghfous and Barkhi, 2009; Oz and Jones, 2008).

Chathoth (2007) illustrates how a system can be used to meet the demands of customers in the hotel industry. It is common in this industry to find guests who have been satisfied with the intangible attributes of a particular room and request that room each time they check in. An information system could help identify the factors that influence such a decision; the good service could be associated with having the room set up in the same way (decor of the room, layout, colour combination, view, amenities, odour etc) each time the guest checks in. This information on the preferences of the customer can be re-used at the time of pre-registration, which would automatically activate guest history at the time of reservation, thereby carrying forward all requests made by the guest during previous stays and highlighting all service requests that were recorded over multiple stays. Using IT in such scenarios can lead to hotels personalising services to different customers.

In addition to the personalised service that customers enjoy, Buhalis (1998) notes several IT facilitated factors which enhance consumer satisfaction. These factors provide a greater choice in products; a reduction of bureaucracy and paperwork effectively frees time for customer service; customizing the product and establishing “one-to-one” marketing by using intelligence collected by loyalty schemes (e.g. dietary requirements, product preferences) providing new services and finally better integration of departments and functions of organisations towards better service.

Thus, it is noted that customer satisfaction and customer needs have been the determining factors in the technology that Boutique Hotels use. The need to satisfy customers and to ensure that customers continue to purchase hotel services, has led to the use of IT, to bring about IT-enabled change in the way hotel products are packaged and displayed.

#### **4.4.2 Marketing management**

To effectively market any organisation, information has to be managed efficiently. As the hotel industry is largely dependent on information, the effective use of IT is therefore pivotal

(Buhalis, 1998). The discussion on customer management clearly highlights the intangible nature of hotel industry services. For organisations to display these intangible services for inspection by customers, they depend upon the descriptions and representations in the information brochures and other material. Buhalis (1998) stresses that this information should be timely, accurate and relevant to consumers needs in order for organisations to satisfy their customers. Therefore, the technology and system a Boutique Hotel invests in is determined by its marketing strategy and its desire to display its services in order to attract the right customer. Ham, et al. (2005) further suggest that technology is gradually becoming a critical source of sustainable competitive advantage in the hospitality industry, specifically in the areas of description, promotion, distribution, organization and delivery of hospitality products. The reason for IT being so critical in this industry is because customers are becoming sophisticated and more demanding, requesting high quality products and value for money (Buhalis, 1998; Chathoth, 2007). It appears then that Boutique Hotels have to strive to implement systems that can assist the management of the customer needs and wants to create consistent satisfaction.

Besides the management of customer needs and information, organisations use IT to build alliances in the hotel industry. Alliances assist hotels in distributing the right marketing mix, to the right segments, through the right intermediaries. Thus, IT does not only facilitate distribution, but also empowers interactive communication between principals and target markets (Buhalis 1998). It is purported by Oz and Jones (2008) that the need to use IT in enhancing alliances in the hotel industry has grown so much that organisations without IT-enabled alliances lose their market share. These alliances are noted for their ability to keep competitive forces in check, their ability to allow organisations to enhance and differentiate their products and offer customers cheaper and consolidated services, as customers do not have to enquire from many organizations. To enable such alliances and interactive communication which adds value to servicing customers, it is noted that the internet has become a crucial asset for organisations in the hotel industry.

According to Wei, Ruys, Hoof and Combrink (2001), the world wide web (www) offers Boutique Hotel owners an alternative way of creating and disseminating information and it enables customers to search for relevant information worldwide. The use of the world wide web has resulted in organisations saving costs as information can be updated and disseminated to a wider range of customers. However, as noted earlier the IT capabilities of Boutique Hotels affects the way the web pages are created. Wei et al. (2001) states that because of the size of IT functions that most SME organisations will have, most Internet pages are built and maintained by specialists external to the hotel. In many instances, researchers note that the lack of understanding by the specialists that offer services to SMEs, in particular Boutique Hotels causes these web pages to be less effective as a marketing medium (Levy and Powell, 2005; Buhalis, 1998; Mutch, 1995). According to Wei et al. (2001), website pages created by these specialists look impressive while they fail to meet the needs of online customers because certain relevant information is overlooked; in some instances the pages contain redundant information. This analysis does not rule out the value that organisations can derive from IT in the hotel industry, but serves to highlight the challenges that Boutique Hotels face as they deploy IT in their marketing management.

Furthermore, Daghfous and Barkhi (2009) identify factors which hinder the development and maintenance of services such as budget constraints, staff attitude, lack of mentoring, and high customer expectations. It appears the failure of IT initiatives in SMEs is due to a lack of practices such as cultural transformation, job redesign, employee involvement, better communication and training. Raz and Goldberg (2006) point out that the lack of an organizational culture in SMEs often leads to a gap between the expectations of IT and the real value that an organization can actually derive. An organisation's culture influences the roles, beliefs and attitudes of employees and in turn the interaction employees will have with technology. Thus, SMEs have to strive to cultivate a good culture which accepts transformation and changes necessitated by technology.

The interaction that employees within an organisation have with technology is usually based on a level of understanding of that technology. Buhalis (1998) notes that hotels face a great challenge in identifying and training managers who will be effective and be innovative users of technology and who will lead technology-based decision making, towards measurable gains and advantages. As previously noted, the skills within an organisation, determine the way technology can be used to connect with business operations, thereby increasing the value derived from IT (Levy and Powell, 2005).

The use of Internet is also seen as the source of change in the tourism intermediaries, in particular the web has changed the operations of travel agencies. Buhalis (1998) states that for a long time travel agencies interacted with customers on behalf of the organisations as brokers of tourism services. The use of Internet has empowered customers in that they are able to purchase their own products directly from the source organisations without using the travel agent. Furthermore, the rise in ownership of computers by customers puts more pressure on the marketing ability of hotels as customers can access information about products and services instantly and inexpensively (Ham et al., 2005). It is important that the ownership of computers and accessibility to information by customers increases the chances of customers making alterations to their reservations; thus hotels have to ensure that they offer services which attract the right customers.

In all, IT is recognised as an essential component of the hotel industry by leading development of competitive strategies for Boutique Hotels. Thus, such a relationship between IT and marketing highlights the need for hotel owners to pay more attention to the IT investment decisions they make so as to consistently derive more value from IT.

## **4.5 Conclusion**

The discussions above reflect how the unique characteristics of SMEs influence the technology and systems used in these organisations. It is essential to point out that the level of

understanding of the owner of the organisation and his/ her attitude towards IT is the determinant factor on how IT is used in an organisation.

IT capability and IT competencies within an organisation have been noted as the determinants of how an organisation derives maximum value from IT. The ability of an organisation to align its operations to the right technology ensures that the right skill is used to ensure that value is derived from IT investments. In addition, the chapter highlighted the importance of IS and IT strategies being incorporated into the business strategy in order to ensure continuous optimization of IT investments.

A number of factors were identified as determinants of the use of IT within Boutique Hotels, the main one being the increasing pressure and demand for better services by customers. It is envisaged that if Boutique Hotels can invest in the right technology and systems, the maintenance of customer satisfaction will be achieved.

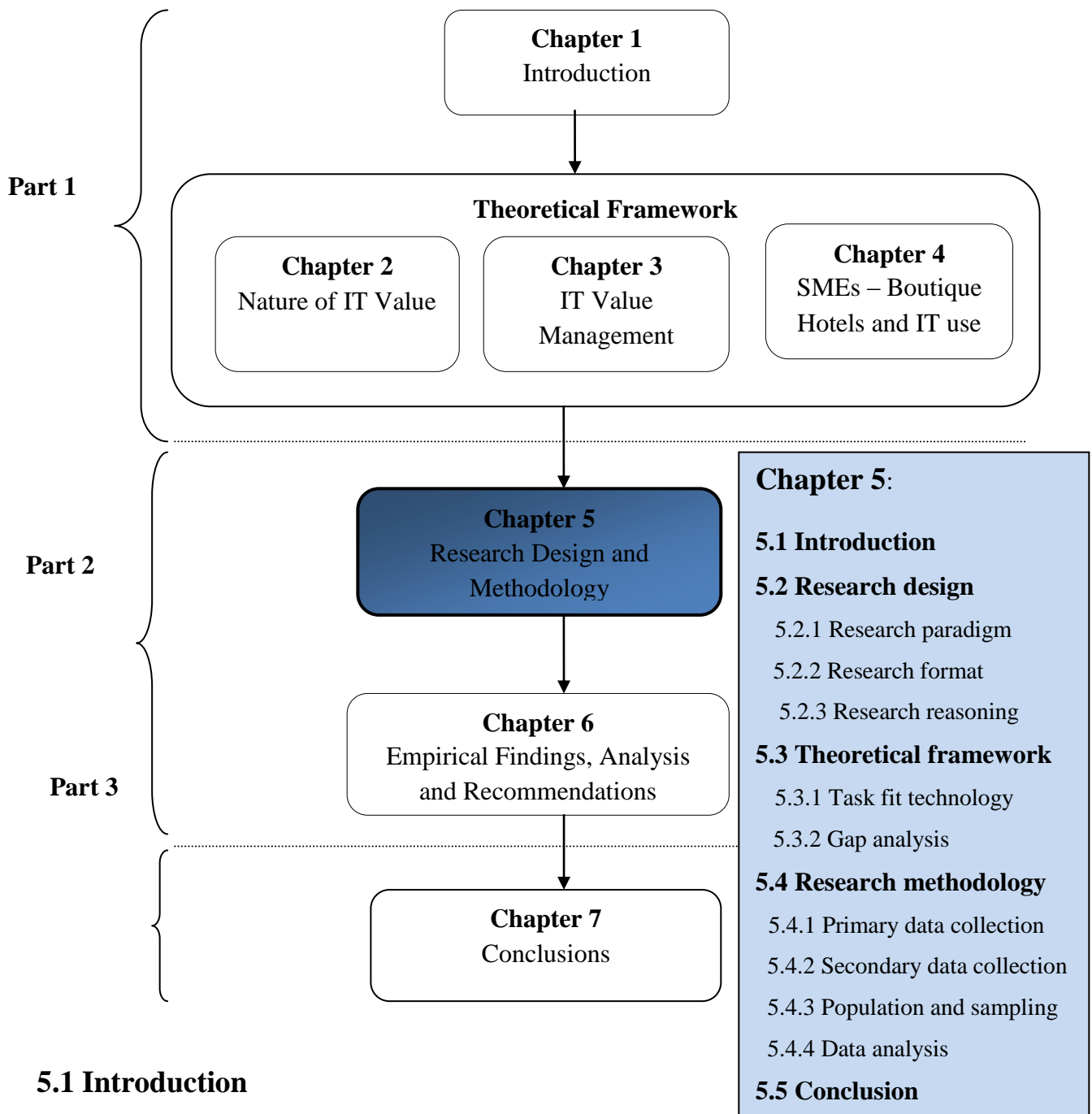
The intention of this chapter is to bring an understanding of the factors that influence the use of IT within Boutique Hotels. Furthermore, the chapter established the importance of Boutique Hotels in identifying their IT capabilities and competencies as these are instrumental in optimizing IT investments. It was noted that the service hotels offer to customers is intangible thus, IT has to be used to display an intangible service, so as to attract quality customers. The chapter highlighted customer and market management as the two areas where IT could be maximised in Boutique Hotels.

The next chapter will discuss the research methodology used in this study to identify how Boutique Hotels should derive value from IT investments. The identification of the gaps will assist in the development of the model that Boutique Hotels can adopt to derive more value from IT.

**PART 2**  
**RESEARCH DESIGN, METHODOLOGY AND**  
**ANALYSIS OF RESULTS**

# CHAPTER 5

## RESEARCH DESIGN AND METHODOLOGY



### 5.1 Introduction

The research design and methodology of this study was determined by the research problem and research objectives identified in Chapter 1. The research design entails the study of the research paradigm, research format and research reasoning. The research design provides an approach from which a plan is developed. The research methodology includes the study of the collection of primary and secondary data, sampling and data analysis techniques as these

represent the framework within which a research project is conducted (Coldwell and Herbst, 2004).

In order to adopt the best research design and methodology, the theoretical frameworks adopted for this study will be highlighted. These are the TTF model, which was highlighted in Chapter 2 and the Heeks (2001) Gap Analysis.

Coldwell and Herbst (2004) state that the research methodology chosen should be relevant, since research facilitates effective management by providing information that improves the decision-making processes. Therefore, this chapter will examine the methods of collecting and analysing data which will assist in the development of a model that Boutique Hotels can use to derive IT value.

This chapter is crucial as it provides a link between the research objectives identified in Chapter 1 and the research contribution of this study. Therefore, the research design adopted for this study will be highlighted as well as the methodological framework of collecting and analysing data. In addition, the theoretical frameworks, which are guidelines to this study, will be examined. Finally, the chapter will give a brief overview of the data analysis approach so as to validate the research findings that will be presented in Chapter 6.

## **5.2 Research design**

The objective of this study is to create a model which will enable Boutique Hotels to derive more value from their IT investments. This model will be guided by the theory and frameworks used in this study and informed by the results of the empirical study, to be highlighted in Chapter 6.

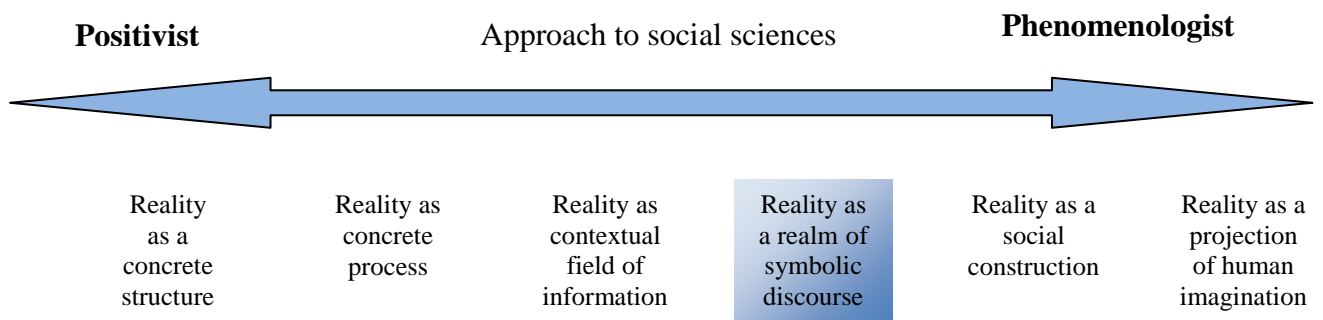
There are two main methods used in research, the *qualitative* and *quantitative* methods. Collis and Hussey (2003) state that *quantitative* is objective in nature and this method looks at what

can be measured. It involves collecting and analysing numerical data and applying statistical tests.

According to Saunders, Lewis and Thornhill et al. (2003), *qualitative* research is the collection of results in non-standardised data requiring classification into categories. Coldwell and Herbst (2004) state that in qualitative research, the research findings are not subjected to formal quantification or quantitative analysis. Furthermore, the strength of qualitative research is noted in its ability to allow in-depth analysis of problems, opportunities and situations in the business environment. In addition, Collis and Hussey (2003) state that qualitative research is more subjective in nature and involves examining and reflecting on perceptions in order to gain an understanding of social and human activities. Thus, this study will adopt a qualitative method of research; the analysis will focus on what respondents have to say on the issue of value from IT investments within Boutique Hotels.

### **5.2.1 Research paradigm**

As the research method has been determined, it is important to reflect on the philosophy/paradigm that will influence this research. The premise of a paradigm is that there are different ways and different aspects in which the world is understood and seen. Oates (2006) defines a paradigm as a set of shared assumptions or ways of thinking about some aspect of the world. It is important to note that different philosophical paradigms have different views about the nature of our world (ontology) and the ways we can acquire knowledge about it (epistemology). Figure 5.1 shows the different paradigms of research and what they represent.



**Figure 5.1: Continuum of Core Ontological Assumptions (Morgan and Smircich, 1980:482 in Collis and Hussey, 2003:51)**

Figure 5.1 shows that there are two extremes in research paradigms which are *positivist* and *phenomenologist (interpretivist)*. The *positivist paradigm* assumes that the world is ordered, and regular not random and it can be investigated objectively (Oates, 2006). According to Saunders et al. (2003) the positivism paradigm results in law-like generalisations similar to those produced by the physical and natural scientists. Oates (2006) adds that the aim of the positivist paradigm is to find universal laws, patterns and regularities.

The *phenomenological paradigm (or interpretivist)* is concerned with understanding human behaviour from the participants own frame or reference (Collis and Hussey, 2003). This paradigm stresses the subjective aspects of human activity by focusing on the meaning, rather than the measurement of social phenomena. For the purposes of this study, the term interpretivist will be used in the place of phenomenological.

This study is more inclined towards the interpretivist paradigm as it will attempt to identify, explore and explain how all factors in the study are related and interdependent (Oates, 2006). Figure 5.1 illustrates that the selected position on the continuum is not purely phenomenological. The results from this study may be slightly different if the study is repeated a second time around, hence indicating interpretivism as the dominant paradigm of this research project. According to Saunders et al. (2003) interpretive researchers believe that the business and management world is far too complex for it to be defined by laws. Due to the

complex nature of business functions, an interpretive researcher argues that the world is constantly changing, and also organisations are unique; therefore over-generalising things loosens value. Thus, the model proposed by this study was created from the meanings and values that respondents assign to the questionnaire.

### **5.2.2 Research methods**

In order to effectively study a problem, different research methods can be adopted. This study combines the, *explorative, descriptive and explanatory*, methods of research.

*Explorative* research is defined by Coldwell and Herbst (2004) as a research method that aims to find a problem or hypothesis to be tested. This method is useful when there is a lack of a clear idea of the problems that might be encountered in a study. Collis and Hussey (2003) further define exploratory research as a study which aims to look for patterns and ideas rather than for testing a hypothesis. Explorative research has guided this study in looking for trends within Boutique Hotels in the way they use IT. Through exploration, patterns were identified in the way SMEs, in particular Boutique Hotels manage IT investments and the way they view value from IT. The main objective for existence in most Boutique Hotels is to survive and reduce costs, therefore the prevalence of such patterns affects the adoption of good IT systems. The patterns noted through exploratory research will assist in the formulation of a model that can be used by Boutique Hotels to derive better value from IT investments.

*Descriptive research* is defined by Coldwell and Herbst (2004) as a research method which describes the characteristics of a population or phenomena. It is through the adoption of the descriptive research that the unique characteristics of SMEs are noted. The study of these characteristics shows that it is in the nature of small organisations not to adopt IT at a faster pace because of a lack of skills, resources and environmental influences, to mention a few. These characteristics were studied in detail in Chapter 4.

*Explanatory research* is seen by Collis and Hussey (2003) as a continuation of descriptive research. In explanatory research, the researcher does not only describe the characteristics but also analyses and explains why or how it is happening. Explanatory research is also termed analytical research as it aims to understand phenomena by discovering and measuring causal relations among them. Saunders et al. (2003) concur by stating that explanatory research aims to study a situation or a problem in order to explain the relationships between variables. This study will analyse how Boutique Hotels have been investing in IT. The variables that might influence the way the investments are made, and managed in Boutique Hotels, will be analysed. This analysis will highlight the relationships between the technology characteristics and task characteristics which influence the measure of value that is derived from IT. In order to fully appreciate the research method adopted in this study, the research reasoning adopted will be briefly discussed.

### **5.2.3 Research reasoning**

There are two main forms of reasoning applicable to research, *deductive* and *inductive* approaches. *Deductive* reasoning is defined by Collis and Hussey (2003) as a study in which a conceptual and theoretical structure is developed and then tested by empirical observation, thereby deducting instances from general inferences. Saunders et al. (2003) define deductive reasoning as an approach that involves the development of a theory that is subjected to a rigorous test. This reasoning generalises social behaviour by using a large sample size.

*Inductive* research is defined by Collis and Hussey (2003) as a study in which theory is developed from the observation of empirical reality. In this case general inferences are induced from particular instances, the reverse of deductive research. According to Saunders et al. (2003) inductive theory tries to reduce the chances of cause-effect link between particular variables without an understanding of the way in which humans interpret their social world.

This study will lean more towards inductive reasoning. This is because deductive reasoning will guide the development of a theory in the initial stage of the study whereas inductive reasoning will be applied after the results from the questionnaire are analysed. The research theory guiding this study is highlighted below.

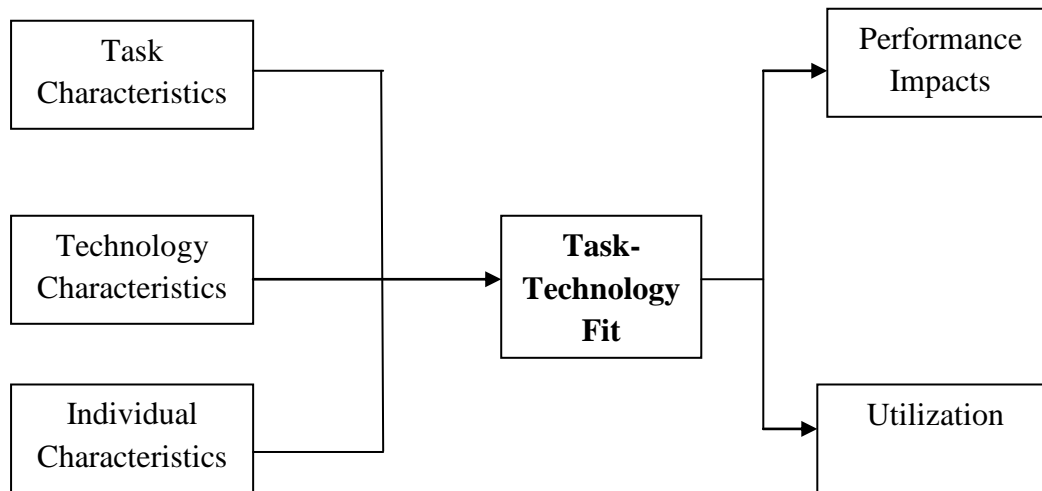
### **5.3 Theoretical framework**

In order for this study to be understood, it is important to reflect on the theoretical foundation. The theoretical framework adopted for this study is the Task Technology Fit (herein referred to as TTF) model which addresses the utilization of IT (Dishaw and Strong, 1999). It is a model which ensures that the task and technology used match before an organization can obtain maximum benefits from technology investments.

In addition, this study is also guided by the Gap Analysis studied in detail by Heeks (2001). This model states that there are seven dimensions of change which can affect an organizational performance. It suggests that organizations have to assess the gap that exists between the reality of those dimensions and the conception stage. This is done by designing proposals or systems that can assist an organization to close that gap. The study of both these theories assists in the understanding of the objective of this research project, which is to develop a model for use by Boutique Hotels to derive added IT value.

#### **5.3.1 Task Technology Fit (TTF)**

The TTF theory addresses the issue that the capabilities of the technology that an organization uses should match the demands of the task (Dishaw and Strong, 1999). The theory is further defined as one that assists an individual in performing his or her tasks (Goodhue and Thompson, 1995). Therefore, the TTF theory holds that if the technology matches the task for which it is being used; the performance of individuals increases and guaranteed. With reference to this study, the technology should be able to match the tasks of Boutique Hotels and also support hotel owners by increasing their performance and that of the organizations.



**Figure 5.2: Task-Technology Fit theory, Goodhue and Thompson, (1995:217).**

For performance impact and good utilization of technology to occur, the TTF model proposes that eight factors that have to be addressed. These are:

- Quality – right data is maintained and the correct level of detail.
- Locatability – meaning of data is easy to be found.
- Authorization – authorization for access to data.
- Data compatibility.
- Ease of use and training.
- Production timeliness and efficient.
- Systems reliability, and
- Relationship with users – IT understanding of business, responsiveness and the delivery of agreed upon solutions (Goodhue and Thompson, 1995).

In addition, McGill and Klobas (2009) state that the TTF model is a function of the characteristics of the task, the technology and the individual. Mathieson and Keil (1998) agree that the fit in the TTF theory is an interaction of the technology and the task. It is important to note that the fit can be estimated only when both the task and the technology are known. Therefore, when an organization successfully analyses the task at hand, it is able to invest in the right technology which will fit the task and also is able to assign a suitable candidate for

that task. This maximizes the use of the technology, hence enabling organizations to experience technology enhanced value.

It is clear that without a proper match of the technology and the task, IT investments will continue to underperform resulting in the IT value that organizations expect. Also, the premise of the TTF theory shows that without the right individuals to use the system, organizations can fail to derive maximum value from their IT investments. It has already been established in Chapter 4 that Boutique Hotels are deficient in skills, especially IT expertise; thus, the adoption of the TTF theory in the study is paramount as it will guide the creation of the model which can enable Boutique Hotels to maximize investments in IT.

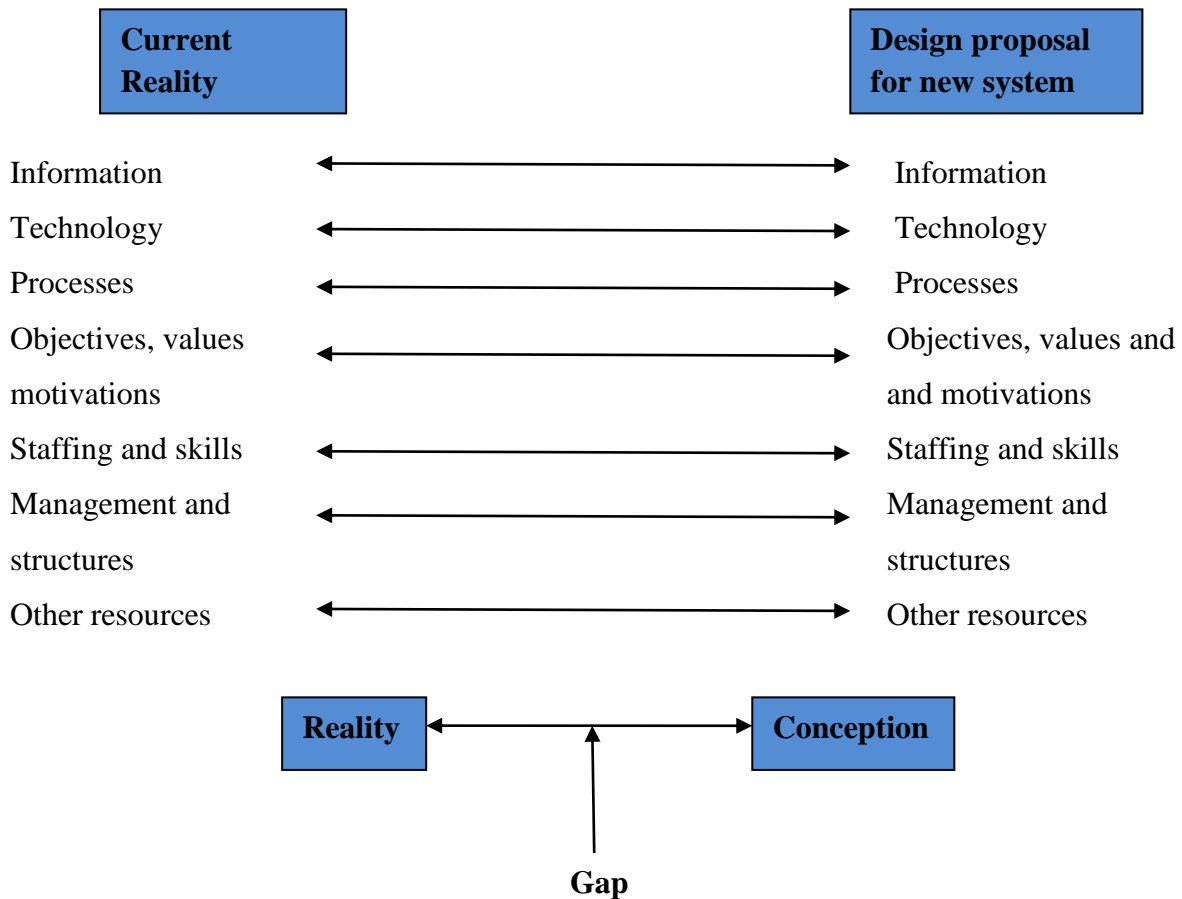
The TTF does not however, address the issue of gaps that can exist in any organization in terms of the reality state and conceptual state of technology use, systems implementation and other dimensions which can affect organizational and individual performance. The gap analysis by Heeks (2001) addresses this shortcoming.

### **5.3.2 Gap Analysis (Heeks, 2001)**

The aim of this study is to create a model which will enable Boutique Hotels to derive maximum value from their IT investments. The premise of the study is that Boutique Hotels in the Buffalo City Municipality can derive more value by improving the way they use their investments in IT. Thus, the model developed in this study will assist in closing the gap that exists in the way they use their IT investments currently and how they should optimally use them.

In order to understand the gap that exists between the reality of IT use within Boutique Hotels and the ideal state, the Gap Analysis by Heeks (2001) will be referred to. The Gap Analysis proposes that there are seven dimensions of change: information; technology; processes;

objectives, values and motivations; staffing and skills; management and structure; and other (financial/ time) resources (ITPOSMO). The Gap Analysis model is shown in Figure 5.3.



**Figure 5.3: Gap analysis, Heeks, (2001: 77)**

The model purports that the design of a new system exposes concepts which assist in comparing the reality and the proposals for the new systems. Such comparisons are essential in that they assist organisations to assess the gap between any of the dimensions referred to in Figure 5.3. Additionally, the continuous assessment of the reality gap within an organisation creates an atmosphere where systems are always under review thus increasing organisational benefits (Heeks, 2001).

The ability of an organisation to assess the change needed on these dimensions can assist in the adoption of technology and systems which can positively impact organisational performance.

Organisations have to assess their status on the seven dimensions above so that proposals for change can be designed. It is envisaged that the model created from this study will assist Boutique Hotels to manage their IT investments optimally, as it will reflect the gaps that exist in the way organisations have been using IT.

For the purposes of this study, the dimensions that have been studied are the information and technology dimensions, while mention is made of staffing and skills issues as they influence the investment and use of IT in Boutique Hotels. The other dimensions were not discussed as they were found not to be critical for value delivery within organizations.

## **5.4 Data Collection Methods**

There are two main sources of data when conducting research, namely *primary* and *secondary* data. Primary data is defined by Collis and Hussey (2003) as original data; it is collected at source. Secondary data is defined as data that already exists such as from books, journals and published statistics.

There are many primary data collection methods which were relevant to this research project. These will be discussed in the following section. The sampling methods used in this study will be examined. Data analysis methods will be examined to validate the results of the research project. The research techniques used in this study are explained below.

### **5.4.1 Primary data collection**

#### **5.4.1.1 Research Instrument**

The research instrument used to collect data in this study is the questionnaire. Saunders et al. (2003) define a questionnaire as a data collection technique which asks respondents to respond to questions in a pre-determined order. In addition, these responses can be obtained through a structured interview or a telephonic one. The interviews conducted in this study, took an average of three hours with each respondent as detailed data was being sourced.

The questionnaire used in this study followed a semi-structured format. There were questions which offered the respondents a list of options they could choose from and also questions which respondents had to provide detailed answers as shown in Appendix A. The questionnaire was lengthy and detailed, therefore in-depth data was gathered from each respondent.

The questionnaires were administered by the interviewer in order to ensure a higher response rate. A 10 – 15 minutes preparation meeting was held with each respondent to explain the objective of the interview and the type of questions to be expected. In these sessions, an overview of the research objectives were given and also the frameworks supporting the research were discussed briefly. Respondents were informed that the objective of the study was not to measure the level of maturity of the IT processes, but to assess the presence of these and also assess the gaps, if any.

The goal of the questionnaire was to obtain a clear understanding of the way Boutique Hotels use IT and the way they manage the IT. Therefore, there were three sections in the questionnaire. Section A dealt with the profile of the organisation and IT investment related questions. Section B included questions from the Val IT framework, which was the basis of Section 3.3.2 in Chapter 3. Section C contained questions from the CobiT framework, which was the basis of Section 3.4 in Chapter 3.

The results of the questionnaire will identify the current status of IT in Boutique Hotels in the Buffalo City Municipality and will enable the researcher to create a model to be used for organisations to derive added IT value.

#### **5.4.1.2 Interviews**

According to Saunders et al. (2003), interviews help researchers to gather valid and reliable data relevant to the research question and objectives. Interviews were instrumental in they were used in conjunction with the research instrument that was adopted in this study.

The interviews used in this study were both structured and semi-structured based on the research instrument (Saunders, 2003). Structured interviews were based on predetermined and standardised questions. They were instrumental in the pilot study. The use of structured interviews led to the elimination of some questions as more information on the nature of Boutique Hotels in Buffalo City was obtained.

Saunders et al. (2003) state that semi-structured interviews use themes and questions to be covered. Some questions can be omitted in some interviews depending on the context of the organisation. The order of questions may be varied depending on the flow of the conversation. On the other hand, additional questions may be required to expand original questions and objectives, given the nature of events within particular organisations. Semi-structured interviews were used to obtain information from respondents.

#### **5.4.2 Secondary data collection**

According to Collis and Hussey (2003), it is important to explore data that already exists, which is secondary data. The exploration of existing literature enables a researcher to obtain a clearer understanding of a research problem and it also provides a background and justification for a research project; hence it is also termed literature review. Saunders et al. (2003) notes that secondary data aids in the development of a good understanding and insight into a research area.

Secondary data sources include books, articles in journals, conference papers, frameworks and reports. This study made use of secondary data in the formulation of the theory and to support the formulation of research instrument, which was used to collect primary data.

### **5.4.3 Population and sampling**

The sample size for this study is 20 Boutique Hotels in Buffalo City. In order to use valuable cases, two sampling methods were adopted, *convenience* and *snowballing* sampling methods.

Convenience sampling is defined as a method which allows for the selection of those cases that are easiest to obtain (Saunders et al. 2003). This method was used in order to choose the most suitable Boutique Hotels. As the study is on the use of IT, the hotels chosen were those already using IT in some of their business processes and who also met the set criteria of at least 15 rooms and a minimum of 10 employees.

However, the snowballing sampling method was used because it was difficult to identify the desired organizations in the Buffalo City geographical boundaries. Thus, the organizations which suited the required criteria were asked to identify other hotels, and the identified ones would also identify other organizations, until the required number of organizations was sourced (Saunders, et al. 2003).

### **5.4.4 Data analysis**

The data obtained from questionnaires was analysed in order to identify trends and to derive meaning. Qualitative data analysis consists of quantifying methods and non-quantifying methods. The quantifying methods of qualitative data analysis involve changing qualitative data to numerical data while the non quantifying methods do not (Collis and Hussey, 2003).

Since the questionnaire is divided into three different sections, two data analysis methods were adopted. Firstly, a matrix was used to assess the questions in Section A, which dealt with the profile of Boutique Hotels. Section B and Section C of the questionnaire dealt with the Val IT and CobiT framework, thus another analysis method was applied to both these sections.

In order to analyze questions from Section A, a matrix to evaluate responses on the questions was created. Questions which provided a list of options for respondents to choose from were assigned a value of 1 to represent a positive response. A collective response was calculated for all the hotels for each question. Responses to semi-structured questions were analysed by identifying common themes which gave meaning to the data.

The analysis method applied to Sections B and C assigned a percentage to each organization in response to each question. All Boutique Hotels were expected to answer all questions, therefore a response from each hotel contributed 5 percent to the overall result of that question.

Questions yielding an overall result of less than 60 percent will be indicative of the gap that exists within Boutique Hotels while questions with a result of more than 60 percent, will indicate the current status of the hotels. These results will be instrumental in the development of the model that Boutique Hotels can use to derive added value from IT.

This study adopted the non-quantifying methods to analyse the responses from the twenty Boutique Hotels interviewed. The analysis of this data involved identifying recurring themes from the responses obtained. The results from the analysis of the questionnaires are discussed in Chapter 6.

## **5.5 Conclusion**

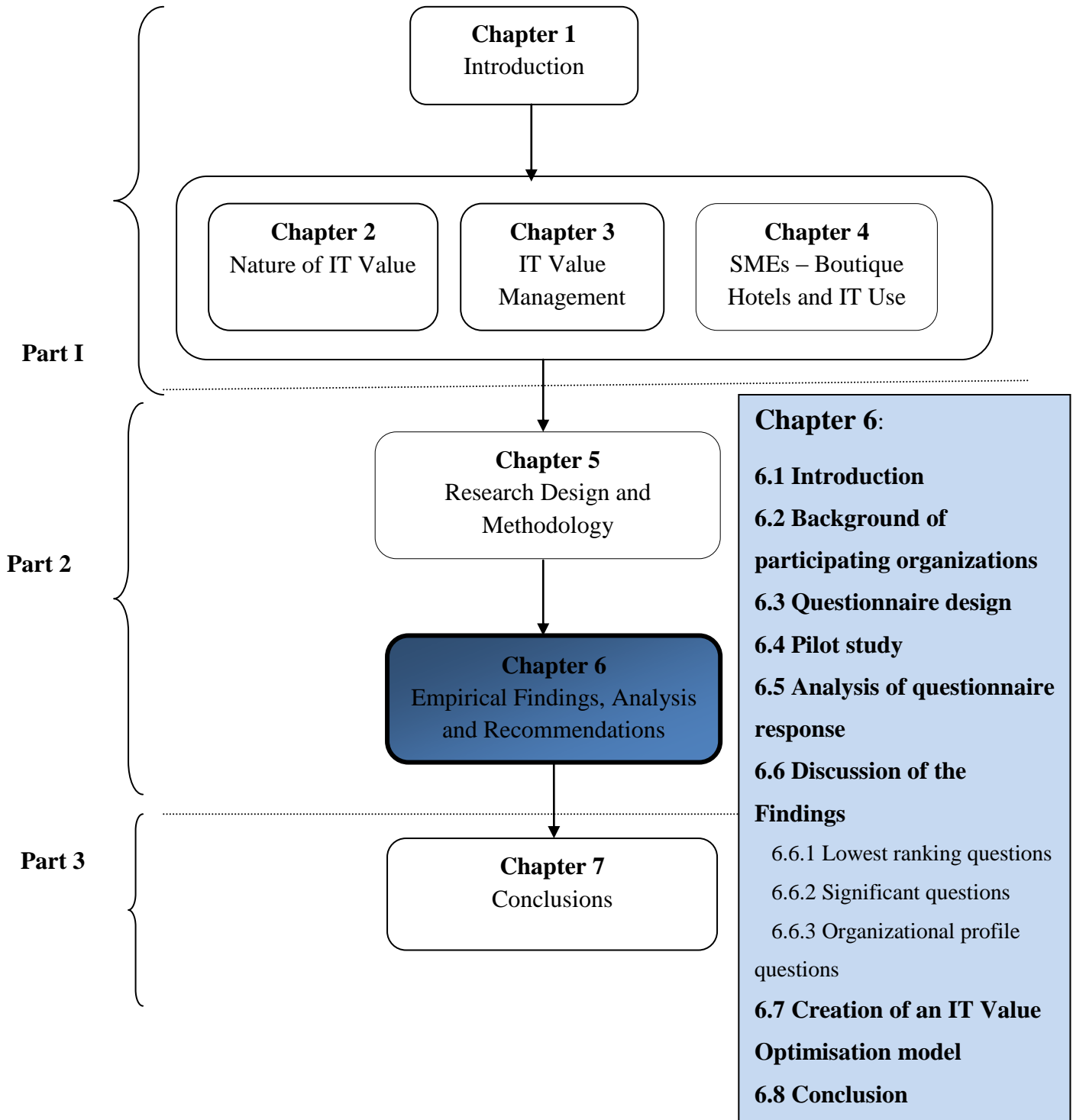
This chapter began by highlighting the qualitative method as the basis for this study. However, the qualitative data was analysed by quantifying the data. The paradigm informing the research methodology is the interpretive because it interprets the behavior of identified factors in a social setting. The research formats adopted in the study are explorative, descriptive and explanatory. These are supported by inductive research reasoning which was also used in analyzing the results.

The Task Technology Fit model formed the theoretical foundation of the study and also the Gap Analysis by Heeks (2001) was highlighted. Both the primary and secondary data techniques were used in this study. In order to collect primary data, interviews based on questionnaires were used on the case studies that were identified using different sampling methods. The chapter also highlighted the data analysis method to be followed to ensure that the objectives of the study were met.

The next chapter will explain in detail the empirical findings. Chapter 6 will explore data collection methods and give an in depth analysis of the results from the data collected. Additionally, the chapter will discuss the recommendations of the study.

# CHAPTER 6

## EMPIRICAL FINDINGS, ANALYSIS AND RECOMMENDATIONS



### 6.1 Introduction

Deriving value from technology is important to all organizations as the use of technology has become integral to the survival of most organizations. Even though some organizations are not

fully dependent on technology for their business operations, the optimization of IT investments is still essential.

This chapter reflects on the analysis of the data collected. The analysis gives meaning to data which leads to trends being identified. These are trends and patterns which will contribute towards the development of a model which can be used by Boutique Hotels to derive added value from IT.

Analysis of data collected is more beneficial when the background of the participating organizations is given so that the meaning derived from the data is contextualized. In addition, the analysis of the data leads to the elimination of questions which were not applicable to the participating organizations, thus ensuring that results and recommendations made by this study are based on the most relevant questions. Such processes ensure that the proposed model for use by Boutique Hotels for them to derive more value, is credible. Therefore, this chapter will highlight how the questionnaire used in the study was designed, how some questions were eliminated and provides an in-depth discussion on the findings from the data analysis. This leads to the presentation of the model which is the main objective of this study.

## **6.2 Background of participating organizations**

In order for the research results to be credible, it is essential to reflect on the background of the participating organizations. Twenty Boutique Hotels in Buffalo City participated in this study. The organizations participated on condition they remain anonymous. Therefore, they have been labeled A, B, C to T. A brief description of these organizations follows in Table 6.1 which shows the number of years of operation, number of employees and number of rooms of each organization.

**Table 6.1 General Organizational Information**

Organization Name		No of years in operation	No of employees	No of rooms	Location
1	A	9	10	15	Vincent
2	B	4	10	14	Bunkers Hill
3	C	5	23	35	Gonubie
4	D	20	40	37	Gonubie
5	E	3	11	21	Bunkers Hill
6	F	3	10	20	Bunkers Hill
7	G	20	14	30	Southernwood
8	H	1	10	18	Bunkers Hill
9	I	5	10	15	King Williams Town
10	J	5	15	27	King Williams Town
11	K	13	9	16	Vincent
12	L	10	9	15	Bunkers Hill
13	M	4	10	19	Bunkers Hill
14	N	7	10	23	Nahoon
15	O	11	12	16	Selbourne
16	P	5	10	18	Gonubie
17	Q	10	42	64	Quigney
18	R	6	32	74	King Williams Town
19	S	13	13	30	Bunkers Hill
20	T	13	21	50	King Williams Town

The Boutique Hotels used in this study were selected using the sampling methods discussed in Chapter 5. The business operations of these organizations can be said to be similar. These range from offering accommodation, conferencing and catering services for different functions. These hotels serve similar customers, with the common customer being government employees and organizations that use the hotels to accommodate their staff over long periods. Technology is used for making bookings, invoicing, emails, stocktaking, marketing and financial management services where specialized systems are often used.

### 6.3 Research instrument design

The research instrument used to collect primary data was a questionnaire. The results from the analysis of the questionnaire responses will assist in the development of the proposed model in Section 6.7 of this chapter. The questions used in the questionnaire were informed by the

secondary data that was studied in these chapters, 2, 3 and 4. Mainly the Val IT and CobiT frameworks were used in the design of the questionnaire as well as the characteristics of SMEs. An informal content analysis of the characteristics of SMEs was conducted as shown in Table 4.1. The characteristics identified in the content analysis informed the choice of questions included in the research instrument.

The questions developed using the characteristics in Table 4.1 were key to the identification of patterns in IT Adoption and Use. Also, these questions were instrumental in highlighting how the nature of Boutique Hotels in Buffalo City influences their investment and use of IT. These questions formed part of Section A in the questionnaire as shown in Appendix A.

The questions drawn from the Val IT and CobiT frameworks were to assess if there are practices and processes that favour IT governance in organizations. The Val IT and CobiT questions are the high-level control objectives with detailed objectives as discussed in Chapter 3, IT Value Management. An example of such a question is shown in Figure 6.1.

	LEVELS					
	0	1	2	3	4	5
<b>VG1 ESTABLISH INFORMED AND COMMITTED LEADERSHIP</b>						
<b>VG1.1 Develop an understanding of IT and the role of governance</b> All executives should have an understanding of strategic IT issues, such as dependence on IT and technology insights and capabilities, so there is a common and agreed upon understanding regarding the actual and potential of IT.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>VG1.2 Establish effective reporting lines</b> Establish effective reporting lines that allow the CIO to engage the enterprise leadership as the advocate of the significance of IT for the enterprise.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>VG1.3 Establish a leadership forum</b> Establish a leadership forum to help the leadership understand the opportunities and responsibilities that arise from business change enabled by current, new or emerging technologies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>VG1.4 Define value for the enterprise</b> Ensure that there is a clear and shared understanding of what constitutes value for the enterprise and ensure that it is communicated throughout the enterprise.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>VG1.5 Ensure alignment and integration of business and IT strategies with key business goals</b> The business and IT strategies should be integrated, clearly linking enterprise business and IT goals and should be broadly communicated and regularly reviewed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						

**Figure 6.1: Example of a question used in the research instrument**

The high-level control objective shown in Figure 6.1 has five detailed objectives which all relate to the ‘Establish of an informed and committed leadership’ control objective. Responses from respondents would be indicated using an X and where there was additional information related to the question, the comments section was used. Thus, in total fifteen high-level control objectives were used from the Val IT framework while ten were adopted from the CobiT framework. The control objectives will be referred to as questions in this section of the study.

The levels indicated on the sample question are taken from CobiT’s Maturity Model. The levels represent the following (ITGI, 2007):

*Level 0: Non – existent*

Complete lack of any recognizable processes. The organization has not even recognized that there is an issue to be addressed.

*Level 1: Initial*

There is evidence that the organization has recognized that issues exist and need to be addressed. There are no standardized processes; instead there are ad hoc approaches that tend to be applied on an individual or case by case basis.

*Level 2: Repeatable*

Processes have developed to the stage where similar procedures are followed by different people undertaking the same task. There is no formal training or communication of standard procedures.

*Level 3: Defined*

Procedures have been standardized and documented and communicated through training. It is however left to the individual to follow these processes and it is unlikely that deviations will be detected.

*Level 4: Managed*

It is possible to monitor and measure compliance with procedures and to take action where processes appear to not to work effectively. Processes are under constant improvement and provide good practice.

*Level 5: Optimized*

Processes have been refined to a level of best practice, based on the results of continuous improvement and maturity modeling with other organizations. IT is used in an integrated way to automate the workflow, provide tools to improve quality and effectiveness and make the enterprise quickly adaptable.

The levels displayed in Figure 6.1 to indicate the maturity of a process within an organization. It is not the focus of this study to measure the maturity level of processes in Boutique Hotels; however the questions will be used as an indicator and guide of the presence of such processes

in the hotels. It is important to note that there are many attributes covered by the Val IT and CobiT frameworks in relation to Value Delivery. However, not all the attributes were used in this questionnaire, as the pilot study showed the applicability of some, and the need for others to be excluded. But, all the processes that indicated Value Delivery as a primary focus area were considered and discussed.

## **6.4 Pilot study**

A pilot study was conducted in order to ascertain the relevancy of the questionnaire. Three Boutique Hotels were used in the pilot study. The pilot study was instrumental in the streamlining of the Val IT and CobiT related questions.

It is important to highlight that initially twelve high-level control objectives were selected from Val IT Framework for use in the pilot study while there were ten from the CobiT Framework. These objectives, from both frameworks, were primarily related to the Value Delivery focus area within the IT governance's five focus area.

### **6.4.1 Structure of initial questionnaire**

#### **Val IT Framework**

The Val IT framework has three domains, Value Governance (VG), Portfolio Management (PM) and Investment Management (IM) (ITGI, 2008b). High-level control objectives were drawn from all three domains as shown in Figure 3.4. The control objectives used in the first draft of the research instrument are as follows:

VG1 Establish informed and committed leadership

VG4 Align and integrate value management with enterprise financial planning

VG6 Continuously improve value management practices

PM1 Establish strategic direction and target investment mix

PM2 Determine the availability and sources of funds

- PM3 Manage the availability of human resources
- PM6 Optimize investment portfolio performance
- IM1 Develop and evaluate the initial programme concept business case
- IM2 Understand the candidate programme and implementation options
- IM7 Update operational IT portfolios
- IM9 Monitor and report on the programme

The CobiT framework has four domains from which questions were drawn. These domains are Planning and Organizing (PO), Acquiring and Implementation (AI), Delivering and Support (DS) and Monitoring and Evaluation (ME) (ITGI, 2007) as shown in Figure 3.5. These were discussed in detail in Chapter 3. The high-level control objectives drawn initially from these domains were as follows:

### **CobiT Framework**

- PO1 Define a strategic IT Plan
- PO5 Manage the IT investment
- AI4 Enable operation and use
- DS4 Ensure continuous service
- DS7 Educate and train users
- DS8 Manage service desk and incidents
- DS10 Manage problems
- DS11 Manage data
- ME2 Monitor and evaluate internal control
- ME4 Provide IT Governance

The pilot study indicated the non-applicability of some of the high-level control objectives to the Boutique Hotels. The final version of the questionnaire used is shown in Appendix A. Furthermore, the study of the characteristics shown in Table 4.1 and the pilot study justified the

removal of some of the high-level control objectives, as the prevalence of some of the characteristics of Boutique Hotels reduced the chances of some processes in the control objectives being initiated. In addition, the pilot study aided in shortening the questionnaire to make it more practical and to ensure it focussed on the core issue.

#### **6.4.2 Results of pilot study**

These questions were included in the initial questionnaire as they were identified as relevant. However, after the pilot study further consideration was given and even though they were important, their relevance to Boutique Hotels in Buffalo City diminished and therefore, they were excluded. Possibly another study for a different market may consider using them. This section is a brief outline of how the high-level control objectives were eliminated:

##### **Val IT Framework**

###### *PM1 Establish strategic direction and target investment mix*

This question was eliminated after the pilot study because it was noted that Boutique Hotels do not commit funds specifically for IT investment. Also, Boutique Hotels do not have strategic plans that are IT related; therefore no time was spent defining the appropriate investment mix for IT, or translating the business strategy and goals into IT strategy and goals.

###### *PM3 Manage the availability of human resources*

The aim of this question is to establish the plans an organisation has concerning IT human resources, plans for the current and future seasons. The question checks if an organisation can maintain a certain level of IT staff and if the organisation understands its current and future IT human resource demands. It has already been established that SMEs are deficient in skills, especially IT related skills, thus this question was eliminated.

*PM6 Optimize investment portfolio performance*

Organizations are expected to manage their portfolio of investments for maximum value to be derived from IT. SMEs have been noted as organizations that do not dedicate funds to IT investment thus this question was not applicable.

*IM1 Develop and evaluate the initial programme concept business case*

In order for organizations to use IT investments optimally, the IT system to be used has to be chosen on its ability to match the business requirements and also the investment on the system had to be as a result of the organization's ability to identify investment opportunities. It was established that Boutique Hotels did not dedicate time to developing the requirements that can be matched to a system of their choice.

*IM7 Update operational IT portfolios*

As discussed above, it was noted that SMEs do not have IT portfolios; thus this question was eliminated.

**CobiT Framework**

*PO5 Manage the IT investment*

As most SMEs do not focus on IT investments and limited time is spent on prioritising IT budgets and the financial management of IT projects, this question was eliminated.

*AI4 Enable operation and use*

This question deals with knowledge transfer to end users, to operational and support staff and also the planning for operation solutions. These were not found in Boutique Hotels.

*DS4 Ensure continuous service*

The provision of services by outsiders and the absence of IT plans and budgets within Boutique Hotels led to the elimination of this question. Ensuring continuous service would result in

organizations improving their value management practices; however this was found not to be applicable to these organizations.

#### *DS8 Manage service desk and incidents*

Boutique Hotels were found not to have service desks to manage incidents, as incidents and queries are dealt with in an informal way between clients and management.

#### *DS10 Manage problems*

As noted above, problems are mostly dealt with promptly; therefore they are neither documented nor classified.

#### *DS11 Manage data*

The identification of business plans to manage data, do backups, dispose and restore data were found to be non-existent. Therefore this question was eliminated even though it was an important question.

#### *ME2 Monitor and evaluate internal control*

The question relates to the presence of an IT control framework, supervision and review of the internal controls concerning IT. The question was excluded as the control of IT was not a priority for Boutique Hotels.

Having shown the questions that were eliminated through a pilot study and after careful evaluation, the next section analyses the primary data collected.

## **6.5 Analysis of primary data**

This section will give an analysis of the collected primary data. It is from this analysis that a model will be created for Boutique Hotels to adopt in order to maximize their technology investments. In order for the responses to be analysed effectively, the questionnaire responses

were classified into two categories. The first category related to the Val IT and CobiT related questions while the second category related to the questions concerning the organization profile.

Table 6.2 shows the questionnaire responses from the Val IT and CobiT frameworks. The first and second rows show the organization name which is denoted by a letter of the alphabet as the organizations requested anonymity. Variables to be noted from the Table are as follows:

- Columns labelled 1, 2, 3 ...20 display the responses by the twenty hotels interviewed. Each relevant response is marked with a 1, while those left blank were noted as less relevant. The relevancy of a response was measured by the presence of the process within a Boutique Hotel, not the level of maturity of the process.
- The row labelled *Weighting* displays the percentage contribution of a response from each organization towards the total result for that particular question.
- The first column on the Table represents the questions from the questionnaire in Appendix A. The questions were divided into two categories, Val IT and CobiT. These questions have been shortened; the detailed ones are reflected in Appendix A.
- The column labelled *Results* displays the cumulative results for all twenty organizations for each question. It is important to note that each organization carried the same weighting of 5% therefore, the formula applied to calculate the cumulative result is as follows:

$$Results = ((A*.05) + (B*0.5) + (C*0.5) \dots\dots\dots + (T*0.5)) = 100\%$$

**Table 6.2 Analysis of the Val IT and CobiT questions**

Organization name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Results	
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T		
<b>Weighting</b>	5 %	5 %	5 %	5 %	5 %	5 %	5 %	5 %	5 %	5 %	5 %	5 %	5 %	5 %	5 %	5 %	5 %	5 %	5 %	5 %	5 %	<b>100%</b>
<b>Val IT Questions</b>																						
VG1.1 Understanding of IT and governance																						0%

VG1.1 Establish effective IT reporting lines	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	100%
VG1.3 Establish a leadership forum																						0%
VG1.4 Define value for the enterprise	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	100%
VG1.5 Alignment of business and IT strategies								1										1	1	1		20%
VG4.1 Review IT current budgeting practices	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	95%
VG4.2 IT Value financial planning requirements																	1	1	1	1	1	25%
VG4.3 Identify IT changes required										1									1			10%
VG4.4 Financial planning for value management																						0%
VG6.1 Implement IT lessons learned.	1	1	1	1		1	1		1	1			1					1	1	1	1	65%
PM2.1 Determine overall IT investment funds							1			1				1				1	1			25%
IM2.1 Understanding of IT candidate programme								1			1								1	1		20%
IM2.2 Perform analysis of the IT programmes alternatives																						0%
IM9.1 Monitor IT programme performance								1			1								1	1		25%

IM9.2 Monitor business performance																					25%
IM9.3 Monitor operational performance																					25%
<b>Organization name</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>Results</b>
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>	<b>I</b>	<b>J</b>	<b>K</b>	<b>L</b>	<b>M</b>	<b>N</b>	<b>O</b>	<b>P</b>	<b>Q</b>	<b>R</b>	<b>S</b>	<b>T</b>	
<b>Weighting</b>	<b>5</b> <b>%</b>	<b>5</b> <b>%</b>	<b>5</b> <b>%</b>	<b>5</b> <b>%</b>	<b>5</b> <b>%</b>	<b>5</b> <b>%</b>	<b>5</b> <b>%</b>	<b>5</b> <b>%</b>	<b>5</b> <b>%</b>	<b>5</b> <b>%</b>	<b>5</b> <b>%</b>	<b>5</b> <b>%</b>	<b>5</b> <b>%</b>	<b>5</b> <b>%</b>	<b>5</b> <b>%</b>	<b>5</b> <b>%</b>	<b>5</b> <b>%</b>	<b>5</b> <b>%</b>	<b>5</b> <b>%</b>	<b>5</b> <b>%</b>	<b>100%</b>
<b>CobiT Questions</b>																					
DS7.1 Identification of education and training IT needs																					10%
DS7.2 Delivery of IT training and education																					10%
DS7.3 Evaluation of IT training received																					10%
ME4.1 Establishment of an IT governance																					0%

The discussion of the results follows.

## 6.6 Discussion of findings

To understand the model created using the results of this study, it is important to discuss the research findings. This section will be split into three, the lowest ranking questions, the significant questions and lastly the findings from the organization profile section of the questionnaires. The discussion on the lowest ranking questions and the significant questions will focus on the Val IT and CobiT sections of the questionnaire.

### 6.6.1 Lowest ranking questions

Below is a brief discussion of questions that had a low response rate, hence ranked lowest. The ranking of these questions explains the gaps that exist in the adoption of IT systems that create value for hotels. In addition, the ranking shows the absence of practices and processes that

could maximize the use of IT in the hotels. The discussion will reflect on the Val IT and CobiT questions separately.

## **Val IT questions**

### *VG1.1 – Develop and understanding of IT and role of governance*

The response result for this question is 0%. This shows that Boutique Hotel owners do not focus on understanding IT governance because they do not see IT as a core component of business operations. Most of the services they have can be offered without the use of IT systems, they rely on paper based systems; thus it was noted that it not essential for IT governance practices and processes to be developed. This is a problem because Ward and Peppard (2002) state that for organizations to derive value from IT, the business strategy has to incorporate IT strategy so that the IT department is not treated in isolation. When the functioning of the IT department is not guided by the vision of the organization, technology is applied less efficiently; hence less value is derived from IT.

### *VG1.3 Establish a leadership forum*

Most of these organizations are owned and (or) managed by husband and wife; therefore leadership is executed in an adhoc, informal manner. The need to establish a leadership forum is not seen as a priority as the owners have the sole responsibility over the strategic direction of the organization. The result for this question is 0%. Even though a leadership forum is not seen as a priority in Boutique Hotels, one would expect the owners of the organization to be aware of the technology needs of the organization. The Val IT Framework identifies the need for a leadership focus as it purports that it is only through effective leadership that IT strategy can be aligned efficiently to the business strategy (ITGI, 2008b). Therefore, the absence of leadership forums in Boutique Hotels has an impact on the value delivered from IT.

#### *VG1.5 Ensure alignment and integration of business and IT strategies with key business goals*

It was established that Boutique Hotels do not align their business goals to IT strategies because most of the business processes can continue without reliance on technology. This is shown by a response result of 20%. This means only four hotels had aligned their business goals to their IT strategies. This is reflected even in the case of one Boutique Hotel with a larger employee number and number of rooms, yet used no system at all, except for the telephone and a computer for emails. All booking and invoices were done manually. This indicates that business goals are isolated from IT strategies and a concern as strategic alignment of business and IT strategies has been identified as the driving force for value delivery (ITGI, 2008a; Levy and Powell, 2005; Fink, 1998; Meng and Lee, 2007).

#### *VG4.4 Financial planning for value management*

The result for this question is 0%. Financial planning is done to reduce costs and to ensure survival of the business. Therefore, financial planning is not executed in order to improve value management.

#### *PM2.1 Determine overall investment funds*

It was established that limited funds are dedicated to IT investments within Boutique Hotels; therefore this question had a response result of 25%. This was only applicable to organizations that had installed IT specific systems as they had to determine the availability of funds to continue supporting the systems.

#### *IM2.1 Develop a clear and complete understanding of the candidate programme*

A candidate programme is a potential system or technology that an organization can apply in its business processes. The data analysis revealed that five Boutique Hotels had hotel management information systems. Of these, only four showed an understanding of the system they had chosen, hence a response result of 20%. One of the organizations installed a system which resulted in glitches and administrative problems for eight months. This illustrates that

there was limited consideration of the programme selected because the selection of the system was not through analysis of alternatives, but through referral by either friends or relatives. According to Peppard and Ward (2004), the lack of assessment of IT competencies and IT capabilities in SMEs, affects the acquisition of systems, as investments will be made in systems which may not match the tasks within the hotel. This analysis of the result can also be made for question IM2.2 which dealt with the analysis of alternative systems by hotels.

#### *IM9.1 – 3 Monitoring and reporting (all questions)*

It was noted that only the hotels that installed systems, monitored and evaluated the performance of the system. However, reports were not documented, as they were raised and addressed informally. Where system problems were registered, they were solved quickly so as to reduce the disruption of service to customers. The absence of monitoring and reporting procedures in Boutique Hotels affects value delivery. According to ITGI (2008a), it is essential for organizations to evaluate the performance of IT consistently in order to make changes which can lead to optimal technology use.

### **CobiT questions**

#### *DS7.1 – 7.3 Educate and Train IT users*

The results show that Boutique Hotels in Buffalo City have not committed to training IT users. Responses from 18 of the hotels indicated the need to have IT skilled employees in-house had not been established. The hotels focus on non-IT related training, which is conducted in-house. Levy and Powell (2005) note that the lack of IT skills within SMEs contributes to the failure in IT value being derived. In addition, Ward and Peppard (2004) state that the lack of skills within these organizations, increases their reliance on IT consultants, who do not understand the nature of small businesses. The observation above highlights how Boutique Hotels in Buffalo City are failing to derive better value from IT.

#### *ME4 – Provide IT Governance*

This question consisted of seven specific questions. It was one of the lowest ranked questions because all seven questions registered a response rate of 0%. A lack of understanding of the need to ensure that technology matches business activities in order to derive more value was registered. In all, it was discovered that there were no processes that focused on ensuring good IT governance practices. Therefore, it can be assumed that Boutique Hotels in Buffalo City have a limited understanding of IT governance. An awareness campaign could benefit these organizations.

#### **6.6.2 Significant questions**

This section will reflect on the questions where a significant response rate was achieved. The questions represent attributes and processes found to be relevant to the hotels. A brief outline of these questions follows.

#### **Val IT questions**

##### *VG1.2 Establish effective reporting lines*

It was noted that Boutique Hotels have established reporting lines as the response result for this question is 100%. However, the Val IT framework prescribes that the reporting lines to be established should be for the IT unit within an organization; it was noted that the reporting lines within Boutique Hotels are for effective management of the whole organization, not IT related.

##### *VG1.4 Define value for the enterprise*

According to the Val IT framework, for an organization to derive maximum value, there has to be a shared understanding of what constitutes value in an organization. The result for this question is 100%. However, it appears the definition of value is generalist and not specific to

IT. This shows that defining value is essential for the hotels because the loss of one customer due to poor service could mean the loss of income, such losses should be limited.

#### *VG4.1 Review current enterprise budgeting practices*

The result for this question was 100% because it is in the nature of SMEs such as Boutique Hotels to ensure prudent financial management as cost reduction is the key to the survival of these organizations.

#### *VG4.2 Determine value management financial planning practice requirement*

As stated above, the allocation of funds and alignment of budgets and their implications is practised by all Boutique Hotels. Even though most of them did not dedicate any funds to the acquisition of IT systems, as shown by the detailed analysis of questionnaire response (Appendix B), Boutique Hotels were found to be strict on their budgets.

#### *VG4.3 Identify changes*

Changes identified by these organizations are implemented in the budgets, even though they might not be IT related. The need to ensure high service delivery was noted within all hotels, thus organizational changes were identified easily.

#### *VG4.4 Implement optimal financial planning practices for value management*

Some of the Boutique Hotels outsourced the management of financials to professionals. This shows the importance of financial management. As noted, financial planning practices are not specific to IT, but exist. In some instances, organizations did not use any financial management software or even Ms Office, but financial planning was done because the financial survival of these organizations is crucial. According to ITGI (2008b) financial planning practices affects investment in IT; thus organizations have to treat IT budgets with the same diligence that is applied to other organizational budgets. This ensures that underperforming IT projects are reduced.

### *VG6 Implement lessons learned*

It was noted that the improvement of organizational value is essential to Boutique Hotels. The result for this question is 65%. Even though the value defined is not technology-enabled, it is continuously improved and reviewed to reduce loss of income. According to Levy and Powell (2005), the fear associated with lack of income of missing a business opportunity often leads SME owners to work hard, thus ensuring that service provision is improvement continuously.

### **6.6.3 Organizational profile questions**

These questions were used to obtain an in depth understanding of the participating hotels. It was also used to highlight any patterns or trends which influence the use of IT and the investment of technology and systems in Boutique Hotels. The following was noted:

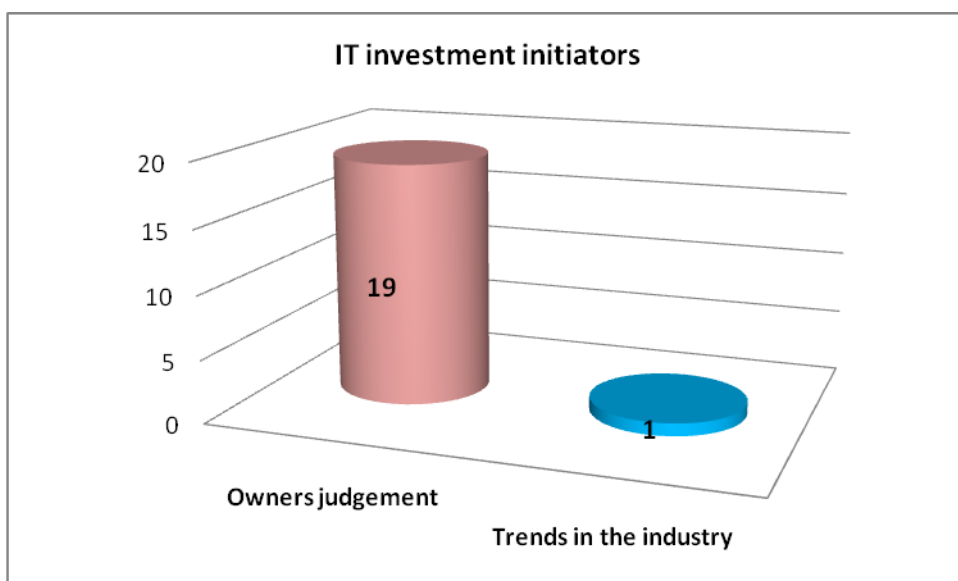
The majority of the organizations that participated in this study have at least two people in management. Table 6.3 shows the people in management in each hotel that participated in the study.

<b>Table 6.3: Management structures</b>			
<b>People in management</b>	<b>More than 2</b>	<b>2</b>	<b>1</b>
No of employees	8	8	4

In most cases the two managers would be a husband and a wife who are also involved in the operational management of the organization. The absence of people dedicated to the strategic objectives of the organization is noted as a contributing factor to the implementation of technology and systems. Levy and Powell (2005) state that the absence of management structures in SMEs affects the investment in IT as time dedicated to strategic direction is limited because they tend to dedicate more to operational management. The focus on operational management also limits the identification of technology needs in an organization

and industry trends might be ignored resulting in IT investments being at the owner's discretion.

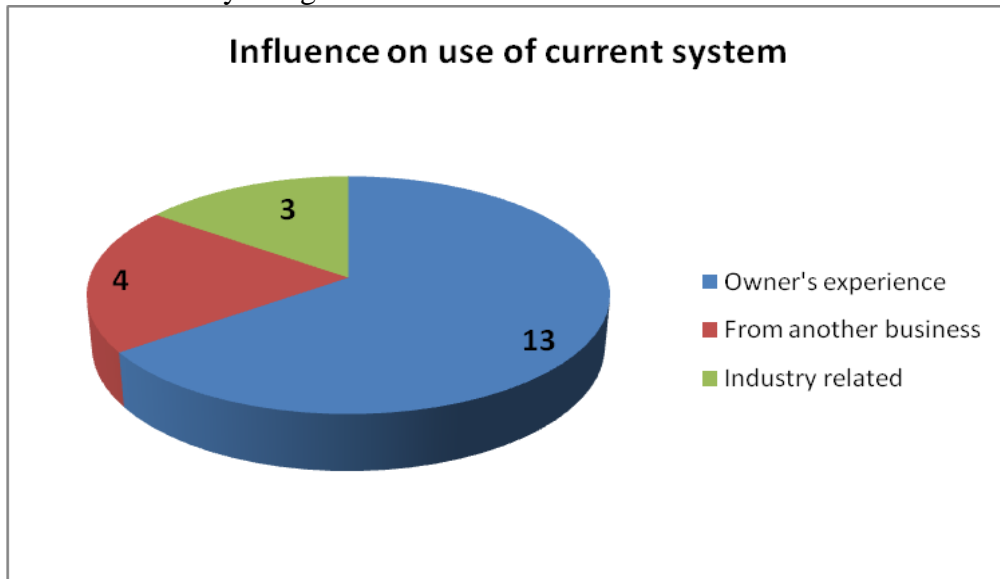
Figure 6.2 illustrates that in most organizations the decision to investment in IT is initiated by the owner, not by trends in the industry. The results show that 19 of the hotels used in the study do not depend on trends in the hotel industry when making IT investment decisions. This indicates that the technology used by these hotels might not be best suited for the processes where it is applied as industry trends are ignored. According to ITGI (2007), the use of the CobiT maturity model can assist an organization to assess the status of its processes, against industry levels. Such an assessment can lead to the investment in the most appropriate technology and systems, thus deriving more value from IT.



**Figure 6.2: IT investment initiators**

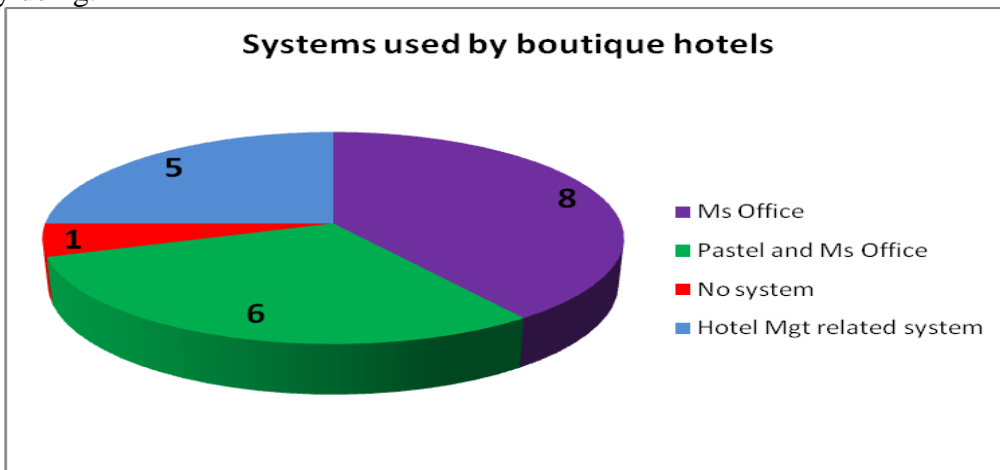
The literature review of this study indicated that the technology needs of an organization are determined by the identification of business processes where the technology can be applied (Levy and Powell, 2005; Ward and Peppard, 2004; ITGI, 2008b). However, the results of the data analysis indicate that investments in current technology by Boutique Hotels in Buffalo City are not determined by predefined business goals or processes but mainly influenced by the

owner's experience. Figure 6.3 shows the factors that influence the choice of system the organizations are currently using.



**Figure 6.3: Influence on use of current system**

Therefore, Figure 6.4 shows the types of systems that Boutique Hotels in Buffalo City are currently using.

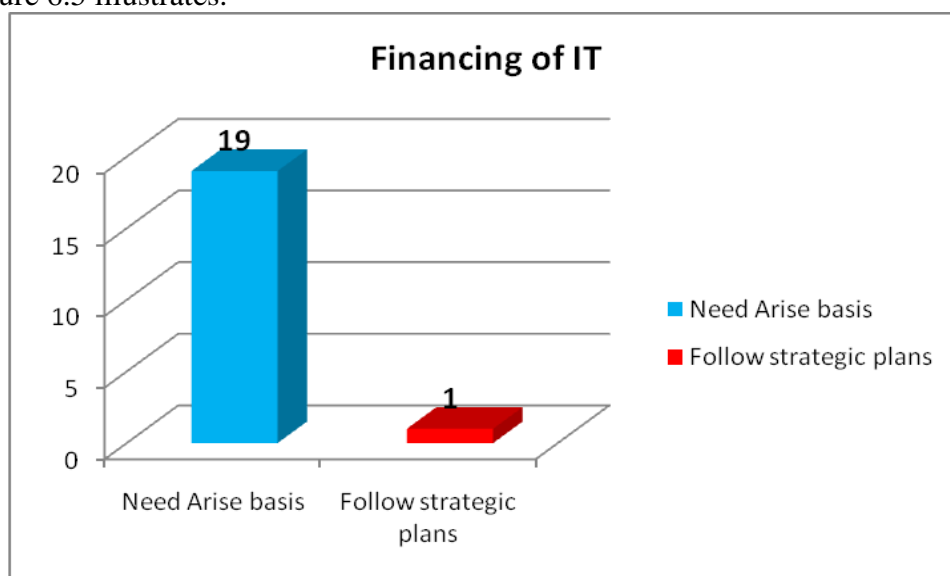


**Figure 6.4: Systems used by Boutique Hotels**

As shown in Figure 6.4, most Boutique Hotels rely on the Ms Office package as a system to manage their businesses. Ms Office systems are off the shelf softwares which are not specialized for any industry. The reliance on unspecialized applications can be attributed to the lack of IT skills as suggested by Levy and Powell (2005). In addition, off the shelf systems are

generally less costly compared to specialized systems therefore, it can be assumed the need to ensure financial survival of the business leads to use of less costly applications (SEDA, 2006).

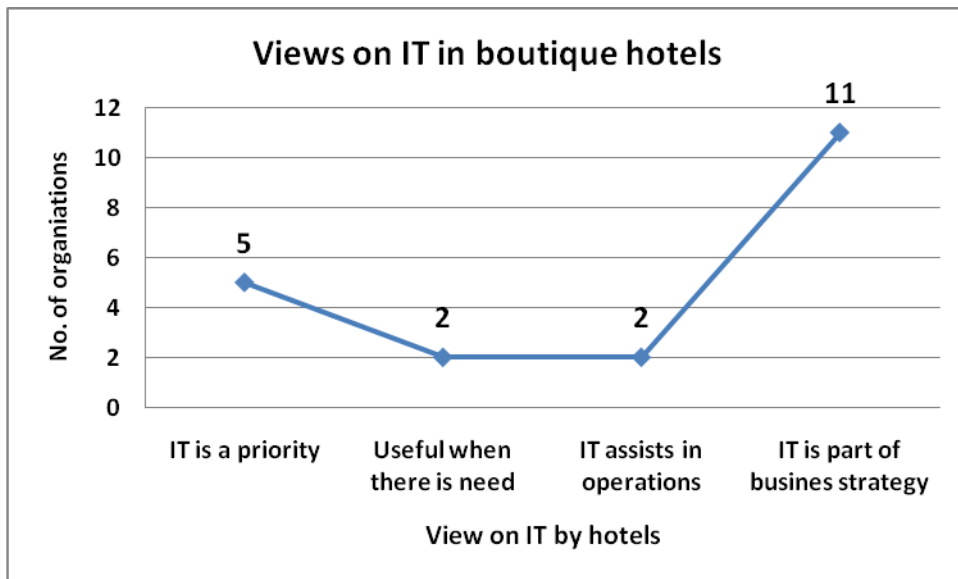
Furthermore, the importance of specialized systems is seen to be minimal as most organizations indicated that investments in IT are only financed when a need for such a system arises, not according to budgets. This could mean that Boutique Hotels in Buffalo City do not view IT as a budget item; thus IT is not treated as a strategic cost but more as an operational cost. Figure 6.5 illustrates.



**Figure 6.5: Financing of IT**

According to ITGI (2008a), IT needs have to be budgeted for in the same way like all other organizational needs. The exclusion of IT in budgets can be indicative of a low perception of technology enabled business operations within Boutique Hotels in Buffalo City. In addition, the need for technology might exist in an organization but if the owner is not equipped to identify it, value from technology might not be derived. Thus, one can conclude that IT value has not been identified as essential by these organizations.

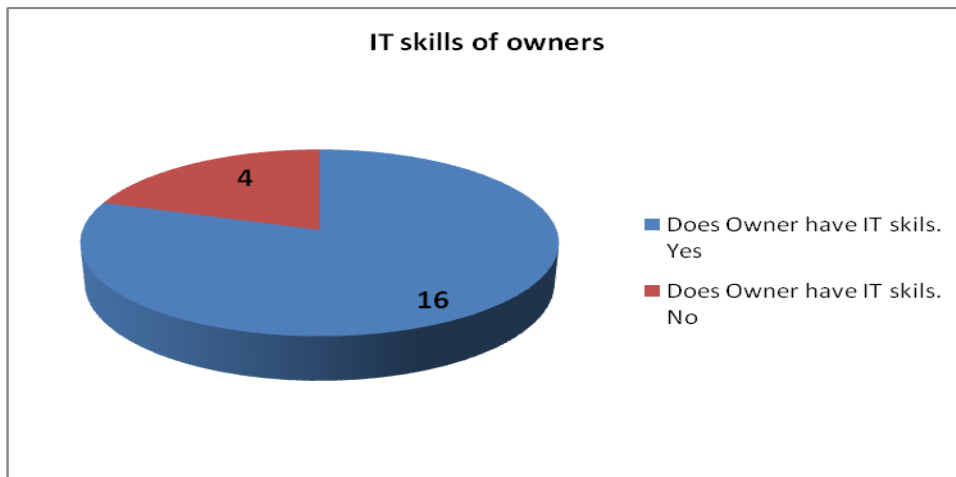
However, when the question of perception of IT was posed, contradicting responses were noted as illustrated in Figure 6.6.



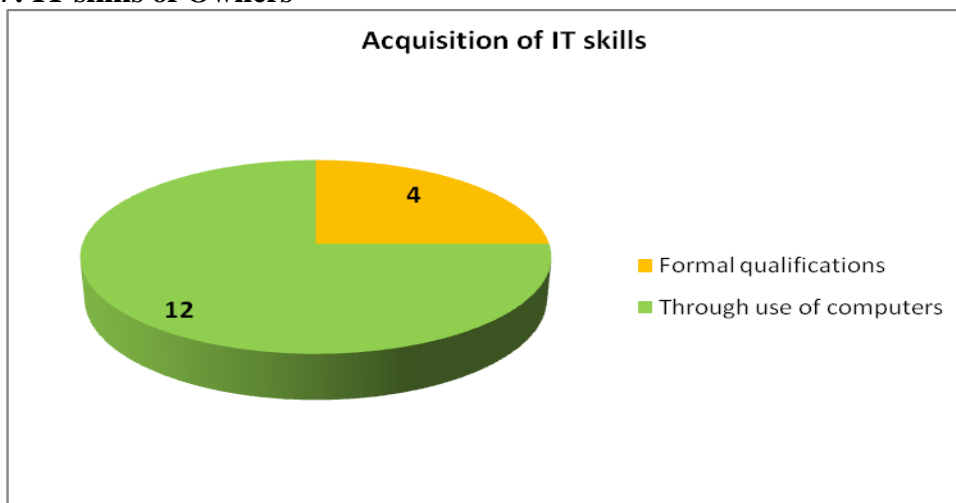
**Figure 6.6: Views on IT in Boutique Hotels**

Figure 6.6 shows that most Boutique Hotels in Buffalo City claim that IT is part of business strategy yet Figure 6.5 indicates that IT investments are not planned for but executed adhoc. This indicates that there is a lack of understanding of what IT value is and what organizations have to do in order to derive value from it. Buhalis (1998) states that for value to be derived from technology, hotels have to identify and develop strategic plans to apply technology where it will be most beneficial to the organization. Boutique Hotels in Buffalo City appear to be treating IT casually instead of making strategic plans which lead to budgeting for IT needs.

The lack of understanding of IT potential by the hotels can be seen in Figure 6.7 which illustrates the skills of owners of organizations and in Figure 6.8 which shows how these skills were acquired.



**Figure 6.7: IT skills of Owners**



**Figure 6.8: Acquisition of IT skills by owners**

Figure 6.7 shows that sixteen of the twenty owners have IT skills. Of these sixteen, twelve have acquired the skill through the use of IT over years as shown in Figure 6.8. Thus, an understanding of IT potential and the opportunities that can be exploited through the use of IT is limited which may be because of the level of expertise within the hotels. Peppard and Ward (2004) identify that the lack of IT capability in organizations is caused a by lack of IT skills. Where IT skills exist, the alignment of the skill to the task and technology is not balanced hence continued failure of IT to contribute more value to organizations.

DeLone (1988) and Fink (1998) propose that the lack of understanding of IT within SMEs has led to the increased use of consultants by these organizations. However, the use of consultants

has not improved value delivery because the consultants themselves lack an understanding of the small business while the owner of the business lacks the understanding of the potential of IT. Therefore, the lack of IT skills within SMEs affects the use of technology, hence reducing the value that can be derived from it.

The discussion above clearly highlights that the adoption of IT in Boutique Hotels seems not to be a priority as strategic plans do not include IT budgeting. Also, the lack of understanding of IT and its potential to organizations is seen as a great influence on how IT is adopted and used. In addition, the owners' influence and IT knowledge have been identified as hindrances to proper IT use, thus Boutiques in Buffalo City are not deriving value from IT. The identification of these trends was instrumental in the development of the IT value optimization model.

## **6.7 Creation of an IT Value Optimization model**

The creation of the model was guided by the Task Technology Fit (TTF) model discussed in detail in Chapter 5. A causal model was selected because such models add a degree of precision to a researcher's theory, since there is a clearer definition of constructs and functional relationships between constructs (Hulland, Chow and Lam, 1996). In addition, causal models are more applicable in this study because they make the assumptions, constructs and identified relationships in one's theory more explicit. Thus, through the use of a causal model, the factors that lead to Boutique Hotels deriving more value will be made clearer.

The development of the model was guided by the literature review which identified the Task Technology Fit (TTF) theory which states that the task characteristics and technology characteristics should be understood so that they can be a match or an interaction which leads to value creation. Furthermore, the literature review indicated the importance of the alignment of IT strategies to business strategies for IT use to be optimized (Ward and Peppard, 2002). The Val IT and CobiT Frameworks highlighted the importance of IT investment decisions

being guided by IT governance practices and guidelines. Also, the model took into consideration the unique characteristics of SMEs as shown in Table 6.2. In addition, the proposed model was guided by the results discussed in Section 6.6. It is envisaged that if a Boutique Hotel adopts this model, the technology-enabled value of that organization will be increased.

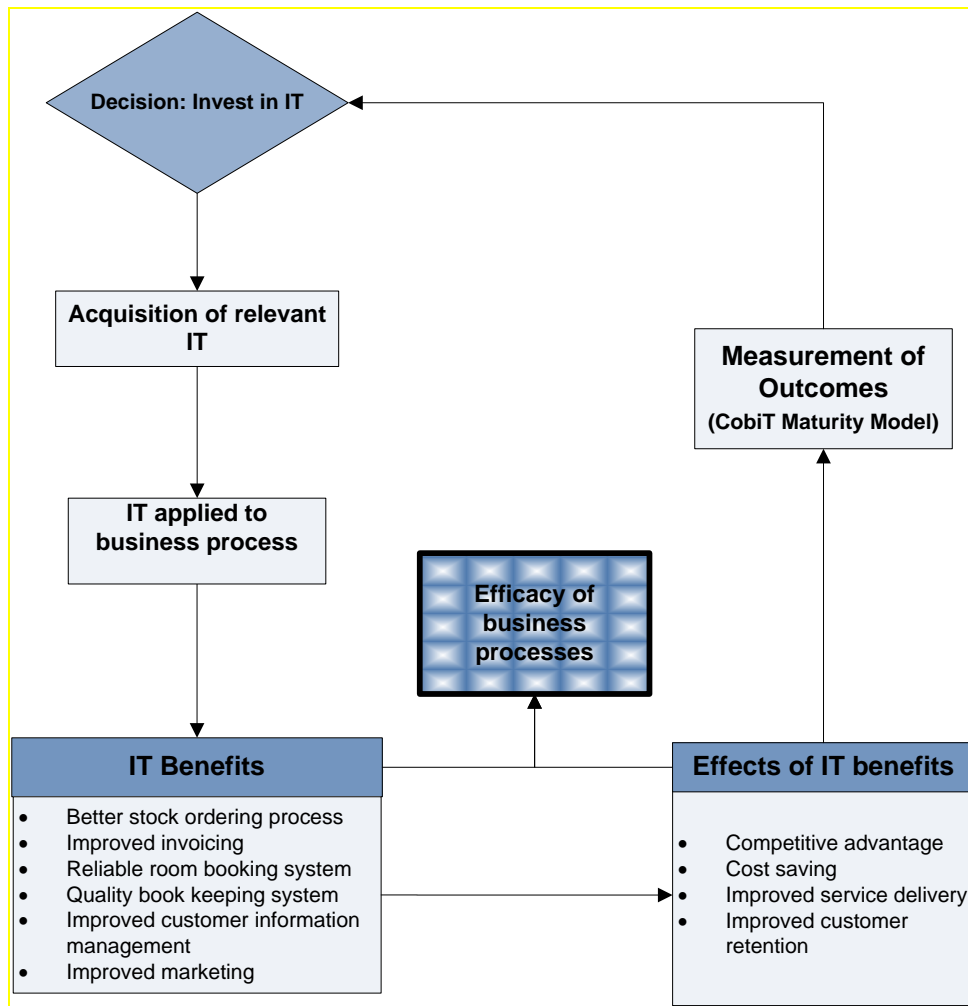
The literature review examined in this study shows that better IT governance in an organization leads to better investments in relevant IT, which yields better value delivery (Levy and Powell, 2005; Ward and Peppard, 2004; ITGI, 2008b). Good IT governance practices emphasize quality investment decisions being implemented and ensure that value is derived from technology while IT related challenges are mitigated. IT governance practices and guidelines enable Boutique Hotels to optimize the use of technology by ensuring acquisition and better use of relevant technology to improve business operations. The business processes identified in Boutique Hotels are:

- bookkeeping,
- invoicing,
- stock ordering,
- customer information management,
- marketing and
- room management.

The identified effects of improved efficiency and effectiveness in these business operations are:

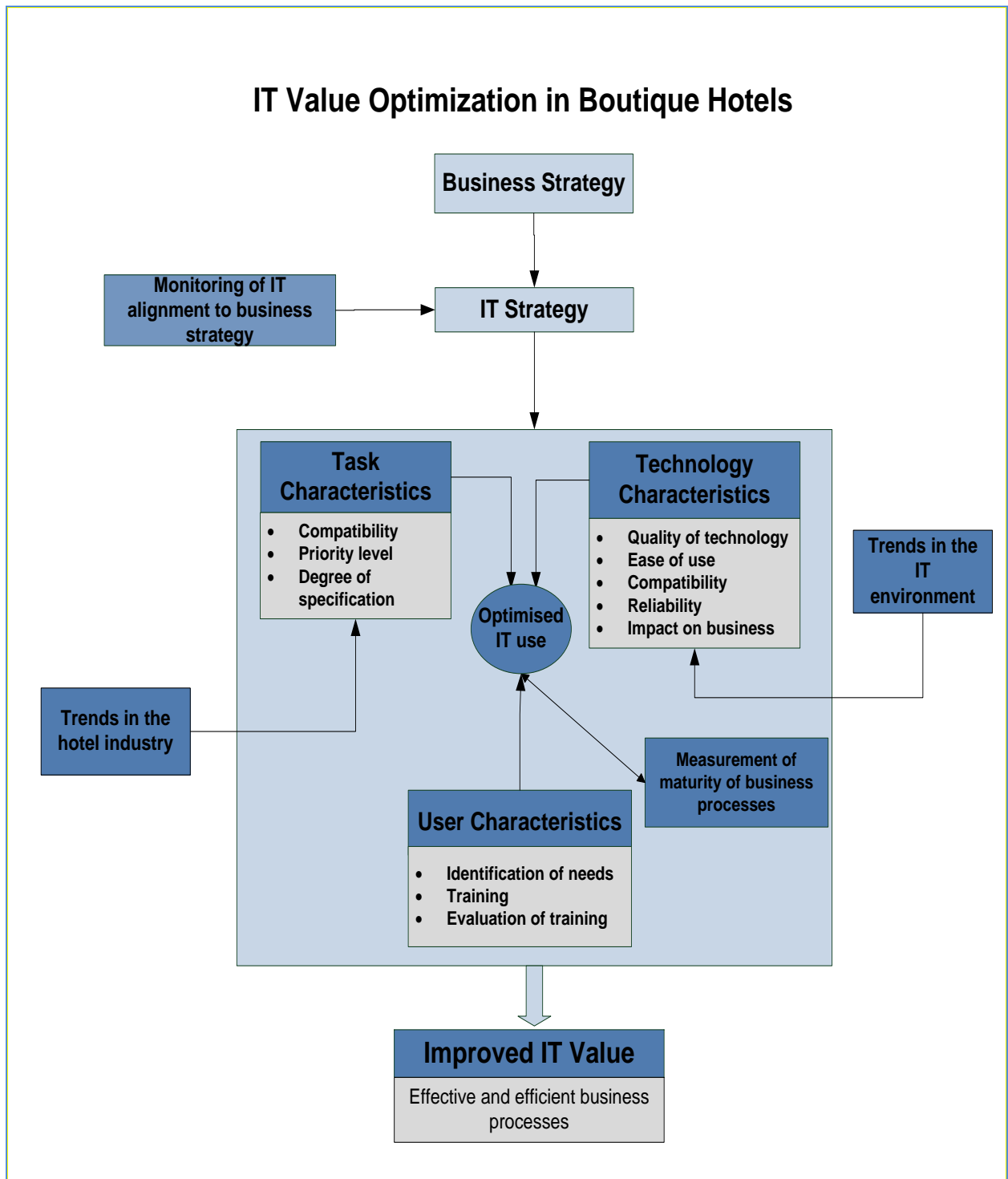
- an increase in better service delivery,
- competitive advantage, and
- retention of customers.

Figure 6.9 illustrates the processes that lead to improved IT value derived in a Boutique Hotel.



**Figure 6.9: Steps to improve IT in Boutique Hotels**

It is important to note that value delivery does not depend on the decision to invest in IT alone, but is determined by other factors that can affect the IT investment decision. Peppard and Ward (2004) illustrate that technology alone does not guarantee IT benefits but the alignment of the IT strategy to the business strategy ensures that technology is applied to areas where value is likely to be derived. In addition, the Task Technology Fit theory proposed by Goodhue and Thompson (1995) illustrates the importance of using technology which matches the task for which it is required. Furthermore, the CobiT Maturity Model (ITGI, 2008) indicates that for an organization to continuously derive value from its IT, processes should be measured against set targets. Thus, the findings discussed above are incorporated and displayed in Figure 6.10 as the proposed model that Boutique Hotels can use to derive added value from IT.



**Figure 6.10: IT Value Optimizing Model for Boutique Hotels**

Figure 6.9 is an in-depth explanation of the improved IT value which is noted as an outcome of the model in Figure 6.10. The model in Figure 6.10 illustrates that for good IT investment decisions to be made, IT strategies have to be aligned to the business strategy. According to Ward and Peppard (2002), the alignment of strategies ensures that the organization clearly

defines the technologies and systems which support the business direction. In order to ensure continuous value delivery from IT, an organization has to monitor the alignment of IT strategy to business strategy continuously as business direction may change due to changes in the business, in the industry or in IT (Levy and Powell, 2005; ITGI, 2008b).

The model shows that when alignment of strategies is achieved, the relevant technology should be matched to the specific task and user within a Boutique Hotel. The choice of technology is determined by its characteristics which can include, quality of technology (ITGI, 2008b), ease of use (Salmela, 1997), compatibility to the task (Ward and Peppard, 2004; Goodhue and Thompson, 1995), reliability (ITGI, 2008b) and impact to business (Buhalis, 1998). It is believed that these qualities increase the optimized use of technology thus enabling a hotel to derive value from IT.

Furthermore, the model indicates that the characteristics of a task where IT is applied should be determined by an organization. These characteristics may include compatibility (Ward and Peppard, 2004; Goodhue and Thompson, 1995), priority level (Levy and Powell, 2005) and a degree of specification (Andersson and Hellens, 1997). Additionally, the model proposes that the technology and task characteristics should be matched to the user characteristics. User characteristics ensure that the most competent candidate is selected to use the system. This study has established that the lack of IT skills within Boutique Hotels affects the use of technology (Levy and Powell, 2005). It is important to note that the choice of the technology is influenced by trends in the IT environment while the task to which IT is applied in hotels is influenced by trends in the hotel industry. According to the proposed model, Boutique Hotels should constantly monitor trends in the IT and hotel industries in order to ensure that the value derived enables them to remain competitive.

In order to ensure continuous and optimal use of IT, the model in Figure 6.10 proposes that maturity models such as CobiT's should be used to constantly measure the maturity of

processes. When processes are measured and identified as below current industry levels or organizational targets, a Boutique Hotel can identify ways to improve that process, thus ensuring that value is derived consistently and continuously.

## **6.8 Conclusion**

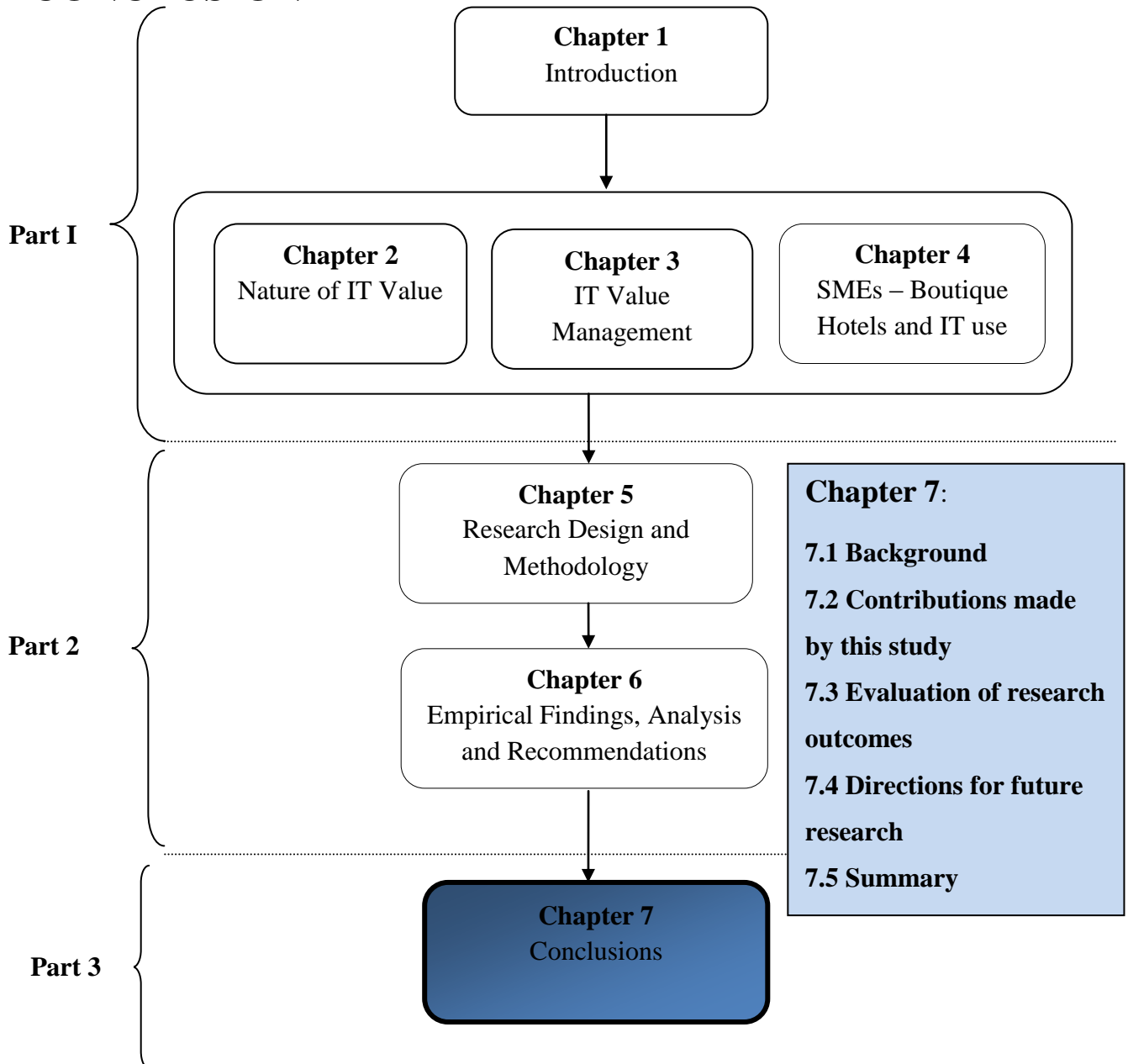
This chapter gave an in-depth analysis of the data collected and provided an analysis of the findings and recommendations of this study. The analysis of the data led to the development of a model that Boutique Hotels can use to derive added value from the use of technology. The analysis of the data led to the identification of gaps which contribute to Boutique Hotels not deriving more value from IT investments. The development of the model was as a result of identifying patterns and trends from the data collected.

The chapter discussed the questionnaire design, detailing how the questions were adopted for use in this study. The pilot study conducted resulted in the elimination of questions which were assessed as least relevant to the organizations used in this study. The analysis of the collected data resulted in the identification and analysis of the lowest ranked questions, the significant questions and the questions which specifically focused on the organizational profile.

A section of the chapter highlighted the trends and patterns that were identified by giving graphical presentation of the results. These results led to the development of the IT Value Optimising Model which could be applied by Boutique Hotels to derive more value from their IT investments. Furthermore, the business processes where IT can be applied in order to drive added value in Boutique Hotels were identified. The next chapter will conclude this research project by summarising the research findings, making recommendations and highlighting future research areas.

**PART 3**  
**CONCLUSION**

# CHAPTER 7 CONCLUSION



## 7.1 Background

The aim of this chapter is to summarize this research project and to report on each research objective. The preceding chapters have been a build up to the objective of the research project that was to create a model which can be used by Boutique Hotels to derive added value from information technology. The theoretical framework of this study was highlighted in chapters 2,

3 and 4. These chapters formed the foundation in the study of IT value delivery in Boutique Hotels. Chapter 5 highlighted the research design and research methodology applied in the study. The findings, analysis and recommendations were discussed in Chapter 6.

It is important to highlight that the research project was guided by the Val IT and CobiT frameworks, the Gap Analysis (Heeks, 2001) plus the Task Technology Fit (TTF) theory. The frameworks and theories guided the creation of the model to be used by the Boutique Hotels. The TTF theory prescribes that for technology to be optimized it should match the task it is required for. When such a balance is achieved, technology is used by the most competent person to derive more value for the organization.

This chapter will highlight the contribution made by this study and also evaluate the research outcomes against the research problems identified in Chapter 1. The chapter will also reflect on future research areas that could emanate from this study.

## **7.2 The Contribution made by this study**

The aim of this study was to develop a model that Boutique Hotels can use and follow to derive added value from technology. The model which is depicted in Figure 6.10, illustrates that Boutique Hotels have to align IT strategy to business strategy so as to maximize IT use. The alignment should identify the value focus areas and also be done continuously so as to ensure that the balance between business and IT strategies is always at equilibrium.

The model took into consideration that SMEs, in particular Boutique Hotels, operate in environments that are ever changing; therefore it proposes the alignment of choices in technology to be benchmarked against trends in the market while aligning tasks with the trends in the hotel industry. This is proposed as for information technology to yield more value, it should be matched to the task so as to ensure the capability of the technology at a particular time. Therefore, the characteristics of the technology, the task and users have to be identified

by an organization in order for the business strategy, which is integrated with IT strategy, to be realized.

In addition, the model proposes that for organizations to ensure maximum optimization of IT, value should be measured by use of maturity models. Maturity models assess the process capability of an organization and as highlighted in Chapter 3, they assist in indicating the level of capability for an organization. In addition, organizations can use the Gap Analysis (Heeks, 2001) to assess the gap that exists within identified dimensions of change. Thus, organizations can use maturity models to assess where they are and compare it to the industry level, thus setting targets of its own. Without effective measurement of value, organizations will continue to incur costs as more funds are invested in IT while minimal value is derived from those investments.

The creation of the model was dependent on an extensive literature review that covered the focus areas of the study, that is the nature of IT value in organizations, guided by the value delivery focus area in IT governance, in the context of SMEs in particular Boutique Hotels value from IT investments. The creation of the model was guided by the Val IT and CobiT frameworks, plus the Task-Technology Fit (TTF) and Gap Analysis (Heeks, 2001) theories.

### **7.3 Evaluation of research outcomes**

The aim of this study was to create a model that can be used by Boutique Hotels to derive added value from IT investments. This model will improve the selection process of IT investments by ensuring alignment of business and IT strategies; hence improving the value that is derived from IT. This section will evaluate the research outcomes of this study against the research questions stated in Sections 1.2.1 and 1.2.2.

The **primary research question** as noted in Section 1.2.1 is as follows:

*What would ensure that Boutique Hotels in Buffalo City can maximise the value of their Information Technology investments?*

In order to fully address the primary research question, three sub-research questions were developed. These are stated in Section 1.2.2 and they are as follows:

1. *Why is IT value delivery important for Boutique Hotels?*

The theoretical framework chapters of this study established that value delivery is important in organizations because it ensures that organizations optimise the use of information technology and reduce the chances of IT project underperformances. Even though some organizations are not fully dependent on IT for their business operations, the optimization of IT investments is still essential. Therefore, deriving more value from IT is important to all organizations as use of technology has become integral to the survival of many organizations.

Chapter 2 of this study was dedicated to addressing this research question. As the focus of this study was based on the value delivery focus area of the IT governance pentagon as proposed by ITGI (2007), there was a need to define value and perceptions that organizations have towards value. The chapter also highlighted the challenges that organizations have experienced in deriving value from IT. These were identified as the difficulty in measuring value from IT and the lack of alignment of business and IT strategies.

Chapter 3 of the study analysed ways in which Boutique Hotels can manage IT value. It was acknowledged that the acquisition of IT alone does not result in the addition of value to the organization. Thus, the chapter introduced IT governance policies and procedures as guidelines that could enable Boutique Hotels to derive better value from IT investments. In order to apply IT governance effectively and efficiently, the Val IT and CobiT frameworks were discussed in-

depth. The chapter also highlighted the importance for Boutique Hotels to manage IT value. The weaknesses of traditional investment measuring methods were outlined thus showing the strengths of the Val IT framework to manage IT value.

Therefore, the need to understand why value delivery is important in Boutique Hotels was necessitated by the failure of many organisations to realise expected benefits from IT investments. The value contribution of IT was to be ascertained so that organisations do not continue incurring costs while IT projects continue to underperform.

*2. What are Boutique Hotels in Buffalo City currently doing to maximise the value delivery of IT?*

To determine the current status of the Boutique Hotels in Buffalo City, this study looked at the nature of these hotels in Chapter 4. The unique characteristics of SMEs and in particular Boutique Hotels were studied so as to understand the adoption and use of IT by these organizations.

In order for this study to develop a model for optimizing use of IT and deriving value, the gaps that exist in the use and adoption of IT had to be identified. Thus, the study on the nature of Boutique Hotels was useful in highlighting such trends as discussed in Section 4.2. Chapter 4 also highlighted and examined the concepts of IT capabilities and competencies. These are concepts that prescribe the capacity and competency levels that should exist in an organization for it to derive value from IT. In addition, the use of IT by Boutique Hotels was highlighted in Section 4.4. This study provided an understanding of the areas on which Boutique Hotels had focused and areas in which they could optimize the use of IT to derive more value.

3. *How can the Boutique Hotels improve their use of IT in order to add value to their businesses?*

This study has established that to derive more value from IT, organizations have to ensure that business and IT strategies are aligned. Establishing a balanced relationship between business and IT strategies requires organizations to identify the potential impact of IT and also evaluate the information systems and technology required to enable the delivery of the business strategy.

Furthermore the theoretical frameworks (CobiT and Val IT) adopted for this study were instrumental in answering this question. This study was guided by the TTF theory which proposes that technology characteristics and task characteristics should match in order for organizations to see the impact of IT on business operations. In addition, the Gap Analysis by Heeks (2001) was studied. This theory states that there are seven dimensions which can lead to gaps which affect the use of IT within an organization.

In order to establish the best way for Boutique Hotels to derive added value from IT, the study adopted a research methodology which was qualitative in nature yet quantifying the results for ease of data analysis. A questionnaire, as the research instrument, was used to collect data. The questionnaire was designed using questions from the theoretical chapters and also drawing on Val IT and CobiT frameworks. The questions used were those whose primary concern was value delivery from the 4 domains of CobiT. The analysis of the data led to the development of a model that would enable Boutique Hotels to derive more value from IT investments.

#### **7.4 Directions for future research**

There are a few recommendations towards future research areas that have been identified. These are:

- This research was mostly guided by the Task Technology Fit theory; further research can be done using other theories such as the Unified Theory of Acceptance and Use of Technology. These theories are based on the behavioral intention and usage behavior to determine acceptance of technology. This theory could be applied in Boutique Hotels to create a model which assesses the influences of use of information technology.
- As this research focused on one type of organization, Boutique Hotels, an assessment can be done on larger hotels, those that are a part of a group or chain to assess how they derive value from IT investments. The characteristics of group hotels and Boutique Hotels are different hence a study on the use of technology by the larger hotels would be a valuable contribution. In addition, this assessment can be done on other organizations which are not part of the hotel industry. It is important for all organizations to derive added value from IT and for IT investments to be optimized.
- Lastly, this study focused on the value delivery focus area of the IT governance pentagon; however there are five focus areas in total. Further research can be done on the other four focus areas in order for IT governance to be established in Boutique Hotels. Value delivery cannot be used independently of the other focus areas to establish all IT governance policies and procedures; thus, further research can be applied to address the other four areas, either individually or as a collective. Only this will provide a holistic IT governance approach.

## **7.5 Summary**

The aim of this study was to create a value delivery model to be used by Boutique Hotels to derive more value and to optimize their use of information technology. This model was created as a result of the analysis of primary data collected from the twenty organizations that participated in the study. In addition, the model was based on the findings from the extensive

literature review. Even though this model was created based on the findings from Boutique Hotels in the Buffalo City, it can be applied to other Boutique Hotels and other organizations, because value delivery (involving IT) should be core to every organization.

The strength of the IT Value Optimization Model is in its ability to incorporate the precepts of the TTF theory and to draw extensively on Val IT and CobiT frameworks, while emphasizing the alignment of business and IT strategies. In addition, the model also incorporates the use of maturity models so that organizations can assess and measure their capability and set targets that they can work towards achieving. These targets can be guided by the industry level of capability on the maturity model.

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## ACRONYMS

AI	Acquire and Implement
COBIT	Control Objectives for Information and related Technology
COSO	Committee of Sponsoring Organizations
DS	Decision Support
IM	Investment Management
IS	Information Systems
IT	Information Technology
ITGI	IT Governance Institute
ME	Monitoring Evaluation
OGC	Office of Governance Commerce
PM	Portfolio Management
PO	Plan and Organise
SME	Small and Medium Enterprise
TTF	Task Technology Fit
VG	Value Governance

# **GLOSSARY**

## **Business Strategy**

It is management plan or method for completing objectives. Further, it is plan of procedures to be implemented, as a way of doing things.

## **Control Objective**

This is a statement of the desired result or the intended achievement through the implementation of control procedures in a particular process (ITGI, 2007).

## **IT Capability**

It is the ability of an organization to align information technology to its business performance. In addition, IT is the ability to translate the business strategy into long term architectures, technology infrastructure and resourcing plans that enable the implementation of the strategy (Peppard and Ward, 2004:176).

## **IT Competencies**

This refers to the resources an organization has, not only IT resources, but knowledge and skills within the IT function and other functions as the IT function cannot work in isolation. Without the right competencies, an organization cannot connect its technology to its business operations to attain maximum business performance (Peppard and Ward, 2004).

## **IT Strategy**

The purpose of the IT strategy is to enable the business strategy to set the direction of the initiatives driven from the business requirements and help the organization create a competitive edge using IT.

## **Information Technology**

IT is hardware and software. IT automates an information system which is independent of IT. The term IT used within this study refers to both IT and IS interchangeably, as the two in effect operate together within an organization to enable business objectives to be met.

# APPENDIX A: QUESTIONNAIRE DESIGN

## SECTION A: ORGANIZATION PROFILE

### 1. Details of Respondent

a. Respondent's name:	b. Position in organisation:
c. Business tel. number:	d. Email address:

### 2. Business Profile

a. Organisation name:			
b. Years in operation:			
c. How many people do you employ presently?	<b>i. Total</b>	<b>ii. Full-time</b>	<b>iii Part-time</b>
d. List the core business operations of the organisation.			
i.		iii.	
ii.		iv.	

### 3. Management Profile

a. How many people hold management positions within your organisation?			
b. Of those in management, is there anyone with IT expertise except the owner?	<b>YES</b>	<b>NO</b>	
c. Does the owner(s) have any expertise in IT?	<b>YES</b>	<b>NO</b>	
d. If answer is YES, state how this experience was acquired?			
<b>i) Formal qualifications</b>	<b>ii) Accumulated through years of experience in use of IT.</b>		
e. What amount of time is spent in a week by the owner on the items listed below? (Indicate in days.)			
<b>i. Management issues</b>	<b>ii. Day to day operations</b>	<b>iii. Strategic growth of business</b>	
f. Is use of IT/IS in planning and forecasting of essence to the organisation?	<b>YES</b>	<b>NO</b>	
g. If answer is YES to question above, please state which systems the organisation uses for planning.			
<b>i.</b>	<b>ii.</b>	<b>iii.</b>	
h. What is the organisations view of the contribution of IT to the business growth?			
<b>i. IT is not a priority, no</b>	<b>ii. IT is useful when</b>	<b>iii. IT assists in the</b>	<b>iv. IT is part of business</b>

need to focus more on it	there is need	operations of the business	strategy
i. How does the organisation finance IT investments?			
i. When there is excess funds and can afford to invest		ii. Strictly follow budgets	
iii. As the need arises in the organisation		iv. Other (specify)	

#### 4. Financial Profile

a. How much does your organisation generate in a month?			
i. Less than R25 000		ii. Between R25 001 and R40 000	
iii. Between R40 001 and R65 000		iv. Above R65 000	
b. How much of the organisation's earnings were invested in IT in the previous year?			

#### 5. IT Investments

a. What does your organisation use IT for?			
i.		iv.	
ii.		v.	
b. What has influenced the investment into the system that your organisation is currently using?			
i. Heard about the system through friend		iii. Own experience	
ii. Recommended at industry related conference		iv. Referral from another business	
Other (specify):			
c. What initiates the investment in IT in the organisation?			
i. Customer needs (pressure)		ii. Trends in the industry	
iii. Owner's judgement		iv. Other (specify)	
d. Has the organisation ever experienced problems with prior information technology systems?			
e. State whether the problems stated above have influenced the current investment in IT?			
f. Below are items that could be invested in, please indicate the ones applicable to your organisation?			
i. Training of IT personnel		ii. Software purchases	
iii. Support and maintenance (technical)		iv. Hardware purchases	
v. Website, internet outlook related costs		vi. Security related controls	

g. What type of IT personnel does the organisation make use of?

**i. Staff within organisation**

**iii. Complete outsourcing of IT function**

**ii. Consultants (on need basis)**

**iv. Other (specify)**

h. State the IT skills that are possessed by the people in the category chosen above?

**i.**

**ii.**

**iii.**

**iv.**

i. On a scale of 1 – 6, indicate if the IT investment is equivalent to the value derived by the organisation, 1 representing least value derived and 6, maximum value derived from IT.

**1**

**2**

**3**

**4**

**5**

**6**

j. Please give reasons for your answer in (i) above:

## **SECTION B: Val IT VALUE DELIVERY QUESTIONS (ITGI, 2008b)**

Before assessing the Val IT and CobiT questions, it is important that each level within the generic maturity model be clearly understood. The levels range from non-existent (0) to optimised (5). The various levels are defined as follows:

### ***Level 0 Non – Existent***

Complete lack of any recognisable processes. The enterprise has not even recognised that there is an issue to be addressed.

### ***Level 1 Initial***

There is evidence that the enterprise has recognised that issues exist and need to be addressed. There are, however no standardised processes; instead there are ad hoc approaches that tend to be applied on an individual or case by case basis. The overall approach to management is disorganised.

### ***Level 2 Repeatable***

Processes have developed to the stage where similar procedures are followed by different people, undertaking the same task. There is no formal training or communication of standard procedures, and responsibility is left to the individual. There is a high degree of reliance on the knowledge of individuals and therefore, errors are likely.

### ***Level 3 Defined***

Procedures have been standardised and documented, and communicated through training. It is however; left to the individual to follow these processes, and it is unlikely that deviations will be detected. The procedures themselves are not sophisticated but are the formalisation of existing practices.

### ***Level 4 Managed***

It is possible to monitor and measure compliance with procedures and to take action where processes appear not to work effectively. Processes are under constant improvement and provide good practice. Automation and tools are used in a limited or fragmented way.

### ***Level 5 Optimised***

Processes have been refined to a level of best practice, based on the results of continuous improvement and maturity modelling with other enterprises. IT is used in an integrated way to

automate the workflow, providing tools to improve quality and effectiveness and making the enterprise quickly adaptable.

	LEVELS					
	0	1	2	3	4	5
<b>VG1 ESTABLISH INFORMED AND COMMITTED LEADERSHIP</b>						
<b>VG1.1 Develop an understanding of IT and the role of governance</b> All executives should have an understanding of strategic IT issues, such as dependence on IT and technology insights and capabilities, so there is a common and agreed upon understanding regarding the actual and potential of IT.	0	0	0	0	0	0
<b>VG1.2 Establish effective reporting lines</b> Establish effective reporting lines that allow the CIO to engage the enterprise leadership as the advocate of the significance of IT for the enterprise.	0	0	0	0	0	0
<b>VG1.3 Establish a leadership forum</b> Establish a leadership forum to help the leadership understand the opportunities and responsibilities that arise from business change enabled by current, new or emerging technologies.	0	0	0	0	0	0
<b>VG1.4 Define value for the enterprise</b> Ensure that there is a clear and shared understanding of what constitutes value for the enterprise and ensure that it is communicated throughout the enterprise.	0	0	0	0	0	0
<b>VG1.5 Ensure alignment and integration of business and IT strategies with key business goals</b> The business and IT strategies should be integrated, clearly linking enterprise business and IT goals and should be broadly communicated and regularly reviewed.	0	0	0	0	0	0
Comments:						
<b>VG4 ALIGN AND INTEGRATE VALUE MANAGEMENT WITH ENTERPRISE FINANCIAL PLANNING</b>						
<b>VG4.1 Review current enterprise budgeting practices</b> Examine the practices used to set budgets, including their sub-divisions, allocations for programmes (investments) and business operations (costs).	0	0	0	0	0	0
<b>VG4.2 Determine value management financial planning practice requirements</b> Consider the implications for the enterprise of differentiating investments from costs, funding investments out of alignment with budgeting periods.	0	0	0	0	0	0
<b>VG4.3 Identify changes required</b> Compare the financial planning practices needed for value management with current budgeting practices. Consider how IT and the IT function are to be funded in the future.	0	0	0	0	0	0
<b>VG4.4 Implement optimal financial planning practices for value management</b> Establish practices for financial planning with respect to IT-enabled investments so as to facilitate business case preparation, investment decision making, investment management and the creation of optimal value.	0	0	0	0	0	0
Comments:						

**VG6 CONTINUOUSLY IMPROVE VALUE MANAGEMENT PRACTICES**

<b>VG6.1 Implement lessons learned</b>						
Lessons learned from value management should be regularly reviewed and necessary changes should be planned, implemented and monitored to improve value from IT.	O	O	O	O	O	O
Comments:						

**PM2 DETERMINE THE AVAILABILITY AND SOURCES OF FUNDS**

<b>PM2.1 Determine overall investment funds</b>						
Understand the current availability and commitment of funds; identify options for obtaining additional funds for IT-enabled investments, internally and from external sources. Determine the implications of the funding source on the investment return expectations.	O	O	O	O	O	O
Comments:						

**IM2 UNDERSTAND THE CANDIDATE PROGRAMME AND IMPLEMENTATION OPTIONS**

<b>IM2.1 Develop a clear and complete understanding of the candidate programme</b>						
Develop and document a complete understanding of the expected business outcomes of the candidate programmes, how they will be measured and the full scope of initiatives required to achieve the expected outcomes.	O	O	O	O	O	O
<b>IM2.2 Perform analysis of the alternatives</b>						
Identify alternative courses of action to achieve the desired business outcomes. Select the course of action that has the highest potential rate of return and value, at affordable cost with an acceptable level of risk.	O	O	O	O	O	O
Comments:						

**IM9 MONITOR AND REPORT ON THE PROGRAMME**

<b>IM9.1 Monitor and report on programme (solution delivery) performance</b>						
Monitor the performance of the overall programme, and the projects within the programme, including the business and the IT functions' contributions to the projects.	O	O	O	O	O	O
<b>IM9.2 Monitor and report on business (benefit/outcome) performance</b>						
Throughout the full economic life cycle of the investment, monitor performance, against the business and IT strategies and goals.	O	O	O	O	O	O
<b>IM9.3 Monitor and report on operational (service delivery) performance</b>						
Monitor IT services, assets and resources created or changed as a result of the investment programme, and when they are becoming and have become operation.	O	O	O	O	O	O
Comments:						

## SECTION C: COBIT VALUE DELIVERY QUESTIONS (ITGI, 2007)

	LEVELS					
<b>DS7 EDUCATE AND TRAIN USERS</b>						
<b>DS7.1 Identification of education and training needs</b> Establish and regularly update a curriculum for each target group of employees considering, current and future business needs and strategy, corporate values , etc.	O	O	O	O	O	O
<b>DS7.2 Delivery of training and education</b> Based on the identified education and training needs, identify target group and their members, efficient delivery mechanisms, teachers, trainers and mentors.	O	O	O	O	O	O
<b>DS7.3 Evaluation of training received</b> Evaluate education and training content delivery upon completion for relevance, quality, effectiveness, capturing and retention of knowledge, cost and value.	O	O	O	O	O	O
Comments:						
<b>ME4 PROVIDE IT GOVERNANCE</b>						
<b>ME4.1 Establishment of an IT governance framework</b> Work with the board to define and establish an IT governance framework including leadership, roles and responsibilities, information requirements, to ensure that the enterprises IT investments are aligned with and deliver on the enterprise's strategies and objectives.	O	O	O	O	O	O
<b>ME4.2 Strategic Alignment</b> Enable board and executive understanding of strategic IT issues such as the role of IT, technology insights and capabilities and a shared understanding potential contribution of IT to the business strategy.	O	O	O	O	O	O
<b>ME4.3 Value Delivery</b> Manage IT-enabled investment programmes and other IT assets and services to ensure that they deliver the greatest possible value in supporting the enterprise's strategy and objectives.	O	O	O	O	O	O
<b>ME4.4 Resource Management</b> Use and allocation of IT assets through regular assessment, making sure that IT has sufficient, competent and capable resources to execute the current and future strategic objectives and keep up with business demands.	O	O	O	O	O	O
<b>ME4.5 Risk Management</b> Work with the board to define the enterprises appetite for IT risk. Communicate IT risk appetite into the enterprise and agree on an IT risk management plan.	O	O	O	O	O	O
<b>ME4.6 Performance Measurement</b> Report relevant portfolio, programme and IT performance to the board and executives in a timely and accurate manner for review of the enterprise's progress toward identified goals.	O	O	O	O	O	O
<b>ME4.7 Independent Assurance</b> Ensure that the organisation establishes and maintains a function that is competent and adequately staffed and or seeks external assurance services to provide the board with timely independent assurance about the compliance of IT with its policies.	O	O	O	O	O	O
Comments:						

## APPENDIX B: ANALYSIS OF QUESTIONNAIRE RESPONSES (ORGANIZATIONAL PROFILE)

Question	General questions			No of people in management			IT skills of those in mgt except Owner		Does owner have any IT expertise?		If yes, how was experience acquired?		Name of systems being used	What is the view of IT to business growth?				How does organisation finance IT investments?			Monthly turnover	How much used in IT previous year?	What influenced investment in system?				What initiates the investment in IT in the organisation?			Problems with systems	Did problems influence IT investment?
	No of years in operation	No of employees	No of rooms	> 2	2	1	Yes	No	Yes	No	Formal qualifications	Through use		IT is not a priority, no need to focus on it	IT is useful when there is need.	IT assists in the operations of the bus.	IT is part of business strategy.	When there is excess funds?	Strictly follow budget?	As the need arises?			Above R65K	Through a friend	Own experience	From another business	Industry related conference	Customer needs (pressure)	Owners judgement		
Results				8	8	4	16	4	16	4	4	12		5	2	2	11	0	1	19			0	13	4	3	1	19	0	3	2
Company Name																															
1	A	9	10	15	1	1	1				1	Night Bridge				1			1					1			1				
2	B	4	10	14	1	1	1				1	Ms Office	1					1	1	R 10 000			1				1				
3	C	5	23	35	1		1		1			Ms Office	1					1					1				1				
4	D	20	40	37	1		1		1			All done by hand	1					1					1				1				
5	E	3	11	21		1	1		1			Ms Office				1			1				1				1				
6	F	3	10	20	1		1		1	1		Ms Office				1			1	less	R 30 000				1	1					
7	G	20	14	30	1		1		1		1	Tourism related system	1						1	1	R 30 000			1			1		1	1	
8	H	1	10	18		1	1		1		1	Ms Office	1						1	1	R 10 000			1			1				

9	I	5	10	15	1			1	1	Ms Office		1				1	1	R 0		1				1			
10	J	5	15	27	1			1	1	Pastel			1			1	1	R 30 000		1				1			
11	K	13	9	16		1		1	1	Ms Office		1				1	less	R 12 000		1				1			
12	L	10	9	15		1		1	1	Pastel and Ms Office				1		1	1	R 6 000			1			1			
13	M	4	10	19		1		1	1	Guest manager			1			1	less	R 10 000				1		1		1	1
14	N	7	10	23		1		1	1	Ms Office				1		1	1			1				1			
15	O	11	12	16			1		1	Samper				1		1	1					1		1			
16	P	5	10	18		1		1	1	Pastel and Ms Office				1		1	1			1				1			
17	Q	10	42	64	1			1	1	Pro-tel				1		1	1						1		1		
18	R	6	32	74	1			1	1	Pastel and Ms Office				1		1	1			1				1			
19	S	13	13	30			1		1	Pastel and Ms Office				1		1	1			1				1			
20	T	13	21	50		1		1	1	Pastel				1		1	1			1				1			