AN ASSESSMENT OF BUSINESS PROCESSES DEVELOPMENT AND THEIR MANAGEMENT PRACTICES IN SOUTH AFRICA

MUKENGE SIMON – TSHINU

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AN ASSESSMENT OF BUSINESS PROCESSES DEVELOPMENT AND THEIR MANAGEMENT PRACTICES IN SOUTH AFRICA

By

MS TSHINU

A dissertation submitted in partial fulfillment of the requirements for the degree *Masters in Business Administration* at the Mahikeng Campus of the North-West University

Supervisors:

Supervisor: Prof E. Nyakwende

Co-supervisor: Mr N. Mavetera

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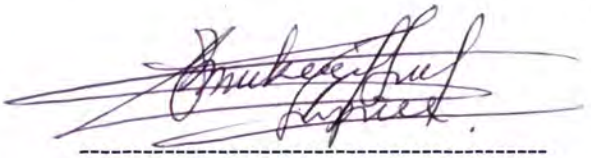
My heart praises the Lord; my soul is glad because of God my Saviour, for he has remembered me, his lowly servant! From now all people will call me happy, because of great things the Mighty God has done for me. His name is Holy; from one generation to another he shows mercy to those who honour him.

Luke 1:46 - 49

DECLARATION

I declare that this research report titled "AN ASSESSMENT OF BUSINESS PROCESSES DEVELOPMENT AND THEIR MANAGEMENT PRACTICES IN SOUTH AFRICA" is my original work and has not been previously submitted to any other institution. The sources quoted are acknowledged by giving credit to the author or authors with full reference. This research report has been submitted for the completion of a Master's degree in Business Administration at the Mahikeng Campus of the North-West University.

Mukenge Simon Tshinu
Student Number: 20973586



Signature

07 MAY 2012

Date

DEDICATION

This dissertation is dedicated to my late friend Pastor Piet Smit. He dedicated his life to help those in need even not known to him. I wish you were here to see what we have achieved with your assistance.

ABSTRACT

The aim of this research was to assess the business processes development and management practices as practiced in South Africa. This study applied a multiple case studies research strategy. It used the qualitative research method as its research approach, and used the grounded theory technique as its data analysis method. The participants were senior business processes developers from different business organisations with experience ranging from six to thirty-two years.

Based on the participants' views, this study found that the need for effective and well defined business processes exist as long as business organisations exist. This is because business processes create harmony and ensure control of different actions and activities of different stakeholders internal and external to the organisation to ensure that organisations produce quality products and services that satisfy the needs of their customers (internal and external) and at the same time ensure that the vision, mission, and objectives of these organisations are achieved.

This study also found that effective business processes can be developed only if the organisations apply the tested best practices and principles. Including a better understanding and mastering of the environmental factors that interact with business processes such as the vision, mission, and objectives of the organisation. The understanding and involvement of people (users and executives managers) within the organisation, the understanding of the needs and requirements of the business and its external stakeholders, the ability to select proper management framework (s) and other related tool (s) to be adapted or entirely used to develop the processes that satisfy the identified needs. It is also important to mention that this study identified the ability to establish proper measurement units (such as KPAs or KPIs) to assess the performance of business processes and proactively develop strategies to deal with challenges and quality requirements when developing and managing business processes are key activities toward successful development of business processes.

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I wish to express my sincere appreciation and acknowledgement to those whom without their support, advice, and participation throughout my Master's degree in Business Administration this research could not have been a complete document as it is today.

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From my heart, I thank you all.

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LIST OF ABBREVIATIONS AND ACRONYMS

BMC	Scott Boulette, John Moores, and Dan Cloer
BPD	Business Process Development
BPM	Business Process Management
BP	Business Process
BPMMF	Business Process Management Maturity Framework
CAD	Computer Aided Design
CIO	Chief Information Officer
COBIT	Control Objectives for Information and Related Technology
ETOM	Enhanced Telecom Operations Map
EFQM	European Foundation for Quality Management
PRM-IT	Process Reference Model for IT
HR	Human Resource
IBM	International Business Machine
IDF0	Integration Definition for Function Modeling
ISACA	Information System Audit and Control Association
IT	Information Technology
ICT	Information and Communication Technology
IET	ITIL Enabling Technology
ITIL	Information Technology Infrastructure Library
ITGI	IT Governance Institute
KPA	Key Performance Area
KPI	Key Performance Indicator
PMBOK	Project Management Body of Knowledge
PRM-IT	Process Reference Model for Information Technology
RCA	Root Cause Analysis
SA	South Africa
SAP	Systems, Applications and Products in data processing
SDLC	Structured Systems Development Life Cycle
SHEQ	Safety, Health, and Environment Quality
SLA	Service Level Agreement
SOP	Standard Operating Procedures
UK	United Kingdom

OGC	Office of Government Commerce
WWW	World Wide Web

CHAPTER ONE: INTRODUCTION

1.1 INTRODUCTION

This chapter presents a brief description of the research idea, the background information, research questions, purpose and an overview of the methodology used for this research.

1.2 BACKGROUND

Business organisations operating in the global market rely on different factors to achieve the expected high performance. These factors include resources such as financial, technological, human, and also the processes followed to achieve specific outcomes are also among other factors those that influence this high performance. To this list, technological innovation, especially in the IT field, has also positively influenced the operations of business organisations.

Rainer and Turban (2009:9-10) describe the era from year 2000 as being driven by globalisation 3.0 which is characterised by global business environment reproached by different flatteners and the Web-based platform. Even if technology has influenced the operations of business organisations, business processes are still valuable as they translate the activities that are implemented into technology.

Business processes (BP) have influenced the operations and service delivery for different organisations, especially those operating in the current dynamic economy. This observation is the same from manufacturing organisations to the service organisations, profit-makers to not-for-profit, and government departments in such a way that without better processes customers become dissatisfied. This may result in them (customers) going to do business with competitors or even strikes in the case of government departments.

According to The Society of Management Accountants of Canada (2000), business process has become more important as customers' expectations are increasing and there is a need to become focused on providing customer value. Simultaneously, time-based competition (shorter planning cycles, shorter lead-time, shorter product development cycles, shorter product life cycle are becoming prevalent. Many enterprises are not ready to meet the concurrent demands of customer-focused, time-based, and low-cost competition because their key business processes are poorly structured. To be specific, a poorly developed business processes.

Before introducing this research in detail, it is important to look at some terms and their definitions as they are related to business processes and business process management (BPM):

- Business process: a business process is a set of coordinated tasks and activities, conducted by both people and equipment that will lead to the accomplishment of a specific organisational goal (SearchCIO, 2008). A business process achieves a goal that the business cares about. This is called the output of the process (Gabhart and Bhattacharya, 2008:29).

  As business organisations operate in different industries with different requirements, their processes vary according to what they deliver. According to Interfacing (2008), business processes are methods, steps and activities performed to provide service. For example, in most companies filling a customer order involves several business processes from processing the order to the shipment of the products. Furthermore, Hurwitz *et al.* (2009:65) mention that in an insurance company, claims handling is a business process. In a hospital, admitting a patient is a business process. In a furniture store, selling a cabinet is a business process. Note that a business process is not automated by definition. It might indeed require manual participation or intervention. But the main gain is efficiency, which comes when processes are automated from end to end, but this isn't always possible. Effective business processes lead to innovation, allowing

companies to do business differently as compared to its competitors in the market.

- Business process management (BPM): BPM is an approach for achieving business goals, coordinating the end-to-end processes of firms, establishing best practices, and furnishing software, such as in a business process management system (BPMS), to describe, analyse, and enhance the efficiency of the processes against business goals (Lawler and Howell-Barber, 2008:5). Mainly, BPM deals with definition and optimisation of business processes (Gabhart and Bhattacharya, 2008:29).

  According to Gabhart and Bhattacharya (2008:33-40), BPM covers the following aspects related to the definition of business process:

  - Define the business process, which involves modeling the process where it moves from As-Is process through the drawing of activities in flowchart diagram to discover weakness to To-Be process.
  - Establishing business process, which will involve the training of staff and selection of appropriate software.
  - Put process into practice.
  - Monitor and control the process to identify the performance level (through the use of alert system or periodic reporting system).
  - Improve the business process where needed.

- Business process development (BPD): it refers to the activities related to the design, modeling, development, implementation of business processes, and aligning them with the business goals to achieve the organisational specific outcome (SearchCIO, 2008).

To ensure that their services and products rendered in a global economy meet the quality requirements, organisations are also required to ensure that their business processes are effectively managed and integrated in their strategies

and the nature of product or services provided to customers from the start to the end with customer focus. This is done with the objective of ensuring that customers are satisfied in all spheres by minimising the time, cost, increasing the quality of products or services and also the channel through which the products and services are to be delivered.

In the words of Sheth *et al.* (1999), speed and distribution will characterise every aspect of most business and organisational undertakings in the current network economy. Companies distributed over space, time, and capability will have to come together to deliver products and solutions in the global marketplace.

As global business operators, organisations are operating in the chain made of different role players, which include suppliers, contractors, customers, government, and different stakeholders that interact with different organisations. To serve all these constituencies of the system, organisations need not only knowledge capable technologies, but also effective processes that successfully link the activities of the organisations to its internal departments and external stakeholders.

Business processes are seen as an inherent part of doing business in the current global economy. That is, although processes will chiefly differentiate between the competitive forces in the networked economy, they will be deeply integrated into business itself. Processes are critical components of almost all types of systems supporting enterprise-level and business-critical activities (Sheth *et al.*, 1999).

Most business organisations that operate in the network economy depend on IT to be successful. If processes and IT services are well integrated and implemented, managed and supported in the appropriate way, the business can achieve success, suffer less disruption and loss of productive hours, reduce costs, increase revenue, improve public relations and achieve its business objective (The IT Service Management Forum, 2007).

Organisations operating in the current networked economy independent of their size or industry, they rely on IT resources to conduct their businesses. Managing IT resources and integrated processes require better understanding and application of best practices such as those provided in the ITIL and COBIT frameworks. Therefore, managing IT processes infers a direct management of business processes as IT infrastructure integrate business processes or translate business activities into IT infrastructure.

Mentioning the importance of frameworks, Violino (2005) mentions that ICT has become increasingly automated, more companies are embracing best practices and procedures outlined in formal ICT frameworks. At stake are service quality, security, regulatory compliance and other increasingly important strategic corporate goals. While some duplication occurs among the frameworks, these are more complementary than overlapping and companies often employ more than one of them. This refers to the application of more than one framework in managing business entities and operations.

Due to the continual changes in the business environment and customers' requirements for service speed and flexibility, and increasing competition in the market, organisations are using different strategies to ensure that they provide value to customers and are ahead of their competitors. Therefore, they (organisations) rely on effective business processes as one of the strategic tools to achieve this market success.

1.3 PROBLEM STATEMENT

Business processes have influenced the operations and service delivery for different organisations, especially those operating in the current dynamic economy. This is the same from manufacturing organisations to the service organisations, profit-makers to not-for-profit, and government departments in such a way that without better processes customers become dissatisfied. This may result in them (customers) going to do business with competitors or even strikes in the case of government departments.

Business processes and their management are part of the important assets that deliver success to any business organisation. According to Hurwitz *et al.* (2009:8), more and more of the activities of an organisation are supported by increasing levels of business process automation, whether its business is to build ships, sell insurance, or manage cities. Business processes have a task of identifying roles, responsibilities, and the orchestration of these players to fit the objectives of the organisation (Gabhart and Bhattachaya, 2008:21). Business processes management obtains knowledge about business processes of the enterprise to facilitate the decision making effort and support interoperability within the organisation (Minoli, 2008).

In spite of their importance to business organisations, business processes meaningfully support the organisation if they are developed and managed with the integration of accepted management standards and integration of the needs of the organisation and role players along the development process. In other words, a development of business processes with a holistic approach. The following statement therefore defines this research:

> How can business organisations in South Africa achieve success in the development and management of business processes through a holistic integration of the tested best practices?

This research project therefore focused on how business processes development (BPD) practitioners can achieve success in the development and management of business processes through the integration of best practices. The goal of the research was to provide insightful awareness in the current development of business processes by identifying critical aspects of business processes to focus on, so that the end product can add value to the business organisation value chain.

Flowing from this main research problem are the following sub-questions:

- How important is business process to the functioning of business organisation?

- Which management frameworks are currently used during the development of business processes?
- To which extent in the development and management of business processes are the framework (s) expressed in the previous questions used?
- What role is played by ITIL and COBIT management frameworks in the development of business processes?
- What are the specific characteristics of a business process that need to be taken care of to ensure that the processes are successfully developed?
- What are the challenges experienced during the development of business processes and how are they dealt with?
- How quality is ensured during the development and management of business processes?

It is envisaged that by answering the above research sub-questions, solutions to the typical problems highlighted in the process development could be found. Then with the use of ITIL and COBIT, and other related business process development frameworks and tools, a model could be designed for the development and management of business process that focus not only on the organisation's objectives and internal factors, but also concentrating on customers and other stakeholders satisfaction and the environment in which the organisation is operating.

1.4 PURPOSE OF THE STUDY

The purpose of this study was to explore and develop an understanding of business processes, their management and how to minimise the effects of challenges occurring during their development and management. At the end, insurance that the developed processes meet the needs of the organisation.

It is believed that such understanding can help in the description of what business process is how to use best practices included in management frameworks when engaged in the business development. The study also

determined the core components related to the environment in which business processes operate in need to be considered before and after the implementation of business process.

It must be emphasised that the purpose of the study was not to formulate a new theory on the topic, but to develop a conceptual model of business processes development and management. This model can be used as guidance in the development, implementation and management of business process by integrating key requirements such as business strategies, objectives and taking account of development challenges.

1.5 ASSUMPTIONS

This research was conducted on the assumption that:

- Business processes are developed and managed using different management frameworks and best practices according to circumstances and the industry in which the organisation is operating and challenges it faces.
- The challenges experienced during the business processes management depend on the size of the organisation, its development stage, and the industry in which it is conducting its operations.

1.6 IMPORTANCE OF THE STUDY

The question of effective management of business processes is addressed in many industries across the world. Mostly with the purpose of determining how these organisations can serve their customers with quality products, on time, and at a lowest cost to gain competitive edge over their competitors. This trend is also observed by South African business organisations as well.

Much has been said related to the question of business processes and their management, how they support the competitiveness of business organisations in the turbulent world of this information age. However, less has been said on how to create a holistic conceptual framework that can help to

effectively implement business processes that fully support the aspirations of the business organisation with the integration of best practices.

The findings and recommendations from this study may be applied by different business organisations to ensure that their business processes are well managed and developed with the integration of industry best practices and taking account of business needs.

This study is important in the way that it acknowledges the importance of business processes in sustaining businesses' strategies and quest for the satisfaction of customers according to the intended standards. It also investigated how business processes can be developed and managed with reference to internationally accepted management frameworks such as ITIL and COBIT and other related tools according to the needs and industry of the business, which are at the same time the collection of management best practices.

Finally, this research raises the importance of business processes and aims to alert business organisations to be process oriented by avoiding identified processes pitfalls and includes best practices in processes management as their outputs are delivered through business processes.

1.7 RESEARCH DEMARCATION

This research is limited to the following points:

- The description of business processes, their characteristics and their management in general or not focusing on a particular industry.
- The brief exploration of different business processes development frameworks, but describes in detail the ITIL and COBIT as they are used in different industries and by businesses of different size.
- The identification and provision for challenges related to the development and management of business processes.
- The raising of importance of business processes, from development to their implementation, and their management in the organisation.

- Presentation of model representing a combined practices from different frameworks and methodologies at different stages of business processes development and management.

1.8 RESEARCH METHODOLOGY AND DATA GATHERING

This study applied a qualitative research approach using multiple case studies research strategy. As a qualitative study, it attempts to understand information by its value as it is collected from the participants.

This research was conducted as an exploratory research study. It uses structured interviews and literature review techniques to collect information relevant to address its purpose and arrive at its conclusion. More detail on the research methodology and data gathering can be found in Chapter Three.

Interviews were conducted with participants who are engaged in the development and management of business processes with a purpose of understanding how business processes are developed, and managed using the ITIL, COBIT frameworks and other related frameworks and tools. The challenges related to the development and management of these processes and the solution on how to manage them have been identified during these interviews, which helped to answer this research questions.

1.9 ETHICAL CONSIDERATION

The correct ethical behaviour is recommended to researchers in any field to ensure that participants are informed about the purpose and outcomes of the research, and their protection from any wrongdoing from the researcher. As confirmed by Cooper and Schindler (2006:116), in all aspects of business, all parties in the research should exhibit ethical behavior.

Ethics is defined as norms or standards of behaviour that guide moral choices about our behaviour and our relationships with others. The goal of ethical behaviour in research is to ensure that no one among the participants and

other stakeholders to the project is harmed or suffers adverse consequences from research activities (Cooper and Schindler, 2006:116).

To avoid unethical behaviour, White (2002:27-28) presents the following list of ethical code of practice that is also observed in this research:

- Only involve people with their consent or knowledge and without coercing them. Also give the participants information about the research before the interview.
- Never withhold information on the true nature of the research and never deceive the participants in any way about the nature of research.
- Never induce participants to do things which could destroy their self-confidence or self-determination.
- Respect of participant's right to privacy and never exposing them to situations which could cause mental or physical stress and treat all the participants with the same degree of fairness.

1.10 RESEARCH LAYOUT

The structure of the research report is presented as follows:

CHAPTER ONE: INTRODUCTION

It provides general information about the topic, objectives of the study, the research problem to be answered and what the researcher aims to achieve by undertaking this research study, and the structure of the final document.

CHAPTER TWO: LITERATURE REVIEW

This chapter focuses on the collection of previously published materials on business processes and different management frameworks used during their development and management.

CHAPTER THREE: RESEARCH METHODOLOGY

It describes the process followed for the planning and execution of this research, and how information was collected and processed to reach the final conclusion.

CHAPTER FOUR: DATA ANALYSIS AND PRESENTATION OF FINDINGS
This chapter provides the analysis of data collected along with the related findings.

CHAPTER FIVE: SUMMARY AND CONCLUSION
This chapter draws final conclusion and recommendations about the research based on the information collected and findings.

1.11 SUMMARY

This chapter provided an overview of this research's title, background, research problem, and the research purpose. This introductory chapter also presented a brief overview of this research methodological process that was followed to arrive at its findings and conclusion.

This chapter mentioned that effective business processes are considered as one of strategic assets such as financial recourses, capable human resources, and technological tools that can improve the performance of the organisation. Therefore, to be effectively managed there is a need to understand first the core components of business processes, and then identify and apply best practices such as those found in management frameworks from the design to their improvement.

The next chapter provides a general overview of business process and their management. It also briefly look at different management frameworks used to develop business processes, among the discussed frameworks include COSO Framework, Capability Maturity Model Integration (CMMI), Six Sigma, the IBM Process Reference Model for Information Technology (PRM-IT), Enhanced Telecom Operations Map (eTOM), ITIL, and COBIT management frameworks. Only COBIT and ITIL are discussed in details in this research as they are considered as best practices standards in management field and can be used in wide range of industries.

CHAPTER TWO: LITERATURE REVIEW

2.1 INTRODUCTION

This chapter was dedicated to the collection of previously published materials on business processes and their management. It starts by describing the business process and process management, then it reviews briefly different management frameworks used to develop and manage business processes but it describes in more details the ITIL and COBIT frameworks as these two frameworks can be used in different industries and can support different operations.

2.2 BUSINESS PROCESS MANAGEMENT

Hurwitz *et al.* (2009:99) say that your business is about the products and services you offer to your customers. It is also about the processes that make you unique in how you deliver value. This means at our understanding that the reason why business organisation exist is to provide services and products to their customers on time, affordable price, and in good quality, which are the outcomes of business processes. The latter exist only through well managed BMP principles, which (BMP) deals with definition and optimisation of business processes (Gabhart and Bhattacharya, 2008:29). Therefore, the existence of well managed BPM contributes to the improvement of business productivity and achievement of business objectives.

Business process management (BPM) is all about managing processes (representing different set of activities set tailored to satisfy customers' requirements or develop a particular outcome, product or service) developed by organisations to deliver the service to their customers. It should be noted that before their management, business processes need to be developed, and implemented.

Mentioning the importance of business processes in an organisation, Papazoglou (2006) provides the following example for an order management process that involves a client, a seller and a trusted third-party: On receiving a purchase order from a client, five tasks are executed concurrently at the seller's site: checkjng the credit worthiness of the customer, determining whether or not an ordered part is available in the product inventory, calculating the final price for the order and billing the customer, selecting a shipper, and scheduling the production and shipment for the order. In order to complete the process, it is worth to note that while some of the processing can proceed concurrently, there are control and data dependencies between these tasks. For instance, the customer's creditworthiness must be ascertained before accepting the order, the shipping price is required to finalise the price calculation, and the shipping date is required for the complete fulfillment schedule.

In general, it can be said that business process management is about:

- Organising the business around processes (set of activities) and focussing on customer satisfaction.
- Clarifying and documenting processes.
- Monitoring progress performance and compliance.
- Continuously identifying opportunities for improvement and deploying them.

Specifying the importance of organisation business processes in the organisation, Carter (2007) specifies that "if you always do what you always did, you will always get what you always got". This implies that if you are looking to get a different outcome, think of changing what you do and how you are doing it, mainly think of the details. It should be a broader process than single activity, the implementation, and the technology. Means that a focus must be on a systemic view of the organisation and processes not just a single aspect.

To achieve higher performance and efficiency with business processes, there is a need to approach them in holistic by looking at the following factors as mentioned by Carter (2007):

- People: having the right people, motivated and performing is naturally a key requirement to performance.
- Technology: providing the people with the right tools to do their jobs well is also vitally important. Computer technology has revolutionised the office environment, and with web technologies and mobile computing we are all becoming much more efficient for longer.
- Process: business process goes right across the organisation. A sales process may start with marketing and production, it may involve accounts, involve sales (close the deal). Then it can go back to accounts. Production's input may involve the supply chain. Therefore, the sales process cannot just involve accounts receivables, but accounts payable too (Carter, 2007).

The above is a systemic view of organisational performance factors and it is shared in the definition of business process in the following way by Kotelnikov (2008), business process is the complete, dynamically coordinated set of collaborative and transactional activities that are organised in a group to create a result of value to customers.

Each word in this explanation is important and can be explained in the following way as provided by (Kotelnikov, 2008):

- A process is a group of activities that add value to a customer, and has a clear purpose.
- Activities represent a stream of relevant, interconnected tasks that must be performed in sequence, the right things in the right way to produce the desired outcome. They are related and organised.
- All activities in the process work together toward a common goal. "People performing different steps of a process must all be aligned around a single purpose, instead of focusing on their individual tasks in isolation".

- Processes are not ends in themselves. They have a purpose, which is to create and deliver results that customers care about.

Writing about the characteristics of business processes, Smith and Fingar (2008) specify that there are eight characteristics that distinguish business processes from other elements of the business. These are:

1. Large and complex: involving the end-to-end flow of materials, information and business commitments.

2. Dynamic: responding to demands from customers and to changing market conditions.

3. Widely distributed and customised across boundaries: processes are found within and between businesses (internal and external to the organisation), often spanning multiple applications on disparate technology platforms.

4. Long-running: a single instance of a process such as "order to cash" or "develop product" may run for months or even years. But some may run for just few minutes such as inquiries from customers that solved at by front desk representatives.

5. Automated: at least in part, routine or mundane activities are performed by computers wherever possible, for the sake of speed and reliability.

6. Both "business" and "technical" in nature: IT processes are a subset of business processes and provide support to larger processes involving both people and machines. End-to-end business processes depend on distributed computing systems that are both transactional and collaborative. Process models may therefore comprise network models, object models, control flows, message flows, business rules, metrics, exceptions, transformations and assignments.

7. Dependent on and supportive of the intelligence and judgment of humans: people (internal and external users) perform tasks that are too unstructured to delegate to a computer or that require personal interaction with customers. People also make sense of the rich information flowing through the value chain, by solving problems before they irritate customers and devising strategies to take advantage of new market opportunities.

8. Difficult to make visible: in many companies, business processes have been neither conscious nor explicit. They are undocumented, embedded, ingrained and implicit within the communal history of the organisation. If they are documented, they are maintained independently of the systems that support them.

To the above characteristics, Caroll (2011) adds the following list which is referred to as the eight characteristics of the systems (processes):

1. The system is designed with the customer in mind: meaning processes must be developed to address customers' needs from beginning the end.
2. The system represents your best-known way of doing something: you set the standard and perform according to the standard.
3. The system has one primary purpose: you set a process to achieve business's objectives.
4. The system has an owner: this is a person who must report on the process outcome.
5. The system is simple, documented, understood by workers, and repeatable: this refers to the documentation for quality control and training.
6. The system has performance standards and results are measured: the requirement for quantifiable results for performance measurement is needed for each project.
7. Workers get ongoing feedback about system performance and are recognised for good results: this is to ensure improvement and motivation for those involved in the process.

8. There is a sufficient focus on system details to eliminate most inefficiencies, waste, and rework: this is why the process is established. To reduce waste and improve productivity.

Developing business processes that fasten the flexibility and speed in the delivery system is not an overnight task. It needs to be well studied, and properly developed by following standards and methods laid in the industry and best practices.

As other strategic assets of the organisation, business process development follows a specific methodology. According to Papazoglou (2006), the methodology follows the following five phases, which are preceded by functional and non-functional requirements, and followed by new working business process:

- Phase 1 Planning: it is a preparatory step to business process development, it serves to streamline and organise the succeeding activities. It serves to analyse the gap in between the service expectations and what is currently delivered, analysis of scenario, and activities planning.

- Phase 2 Analysis and Design: it specifies the services and business processes in a stepwise manner. It focuses on service analysis and design, service specification, process identification, and process specification.
- Phase 3 Service Realisation: this phase transforms specifications from the analysis and design phase into implementation, execution and deployment that may be traversed iteratively.

- Phase 4 Deployment: it aims at deploying the service and process realisations and publishing interfaces in a repository.

- Phase 5 Execution: this phase supports the actual binding and runtime invocation of the deployed processes.

The transition through these phases needs not be sequential and one-pass. It tends to be stepwise incremental and iterative in nature and should accommodate revisions in situations where the scope cannot be completely defined a priori (Papazoglou, 2006). It should be noted that this research was not intended to design a particular process, but to investigate the best practices combined and applied during the development and management of business processes.

Business process management allows the organisation to map the entire cells of the organisation as activities, procedures, steps, resources and more. It creates a model for management, allowing organisations to manage their activities just as they manage the people performing the activities. More than that, BPM allows process managers to enact specific improvements on the company structure with fast implementation, ensuring the most efficient change management (Interfacing, 2008).

Interfacing (2008) asserts also that Process Management lifecycle is made of the following five activities:

- Process Design: business process management starts with the design of efficient core processes that foresee and overcome the hurdles that can be faced over the lifetime of a process. Business process management software systems are an important tool for the process design phase, allowing your resources to efficiently model and improve their process maps.

- Process modelling: Process Modelling takes the process design and introduces costs, resource use, and other constraints that will affect the process lifecycle. Frequently, process modelling incorporates process simulation and scenario analysis into the business process management implementation.

- Process Execution: business process Management is about achieving results. The ultimate goal of any process management initiative is to execute the process design with a high degree of accuracy. Using

business process management workflow tools will help maintain this symmetry between execution and design by keeping employees engaged in process activities.

- Process Monitoring: by monitoring the business process management activities, organisations can track performance on a per-process basis. This allows them to collect data on how processes can be improved.

- Process Optimisation: business process management is about implementing constant improvements in the process structure that will result in efficiency and profit. The optimisation phase of the process lifecycle drives performance and enhances all aspects of your business.

According to Sparx Systems (2008), a business process contains the components such as goals, specific inputs, and specific outputs. It also has the characteristics such as consumption of resources and has a number of activities that are performed in some order, may affect more than one organisational unit, creates value of some kind for the customer, and the later may be internal or external.

SODAN (2008) mentions that improved processes mean improved business. There are many ways in which businesses can make themselves more competitive and profitable by analysing and changing their business processes. Therefore, effective and flexible business processes help the organisation achieve the following:

- Raise productivity.
- Provide a higher level of customer service.
- Obtain flexibility in resources usage, including staff.
- Respond more rapidly to new opportunities.
- Raise the morale of staff through better work environment.
- Deploy new technologies without disruption.

Speaking on the organisation of processes; SODAN (2008) mentions that every business, including non-commercial organisations such as government departments, operates as a collection of interlocking processes. Each process starts with some kind of request, and finishes with the delivery of a service or product. Some processes serve external customers or users, while others may be purely internal or administrative in nature.

Efficient and effective business processes are critical to any enterprise that hopes to maintain and improve its competitive position. Improvement in quality, time, and costs can result in increased profit. The way an enterprise structures and manages its business processes has a significant impact on these outcomes (The Society of Management Accountants of Canada, 2000).

In spite of the advantages of effective business processes on the operations of the organisation, the later (organisation) has different challenges to overcome before reaping the full advantages offered by effective business processes. Rickayzen *et al.* (2005) mention the following five challenges:

- Process-Aware Information support: it relates to the lack of adequate information for the current situation that leads to the analysis of the problem in processes.

- Acquisition and reuse of process know-how: it relates to the need to consider not only the processes that create the knowledge in decision, but also the location where knowledge is produced and needed.

- Flexibility of process execution: it addresses issues related to spontaneity and communication-orientation, low predictability, and evolvement during the execution time.

- Identify and apply process patterns: this allows the iterative identification and application of best practices in the process execution while preserving the flexibility of the processes.

- Make it as simple and beneficial as possible for the employees: this is the ability of the process to help the people executing them to understand first their tasks, and then engage them on the provision of the services without spending time on the learning process.

After an analysis of the above section, it must be mentioned that the point of focus for a business process is to start with customer satisfaction, and finish with customer satisfaction in mind. If the customer focus requirement is achieved in the development of processes, and the latter is effectively managed, the organisation reaps countless benefits, including the following mentioned by Interfacing (2008):

1. It becomes more accountable.
2. It enhances clarity.
3. It improves visibility.
4. It saves money.
5. It reacts quicker to competition.

After the above discussion on the business processes and their management, the following section investigates the theory on different frameworks that can be referenced when developing business processes.

2.3 THEORETICAL VIEW OF FRAMEWORKS

This section focuses on the presentation of different frameworks referenced during the development and management of business processes. But the focus was on the two selected frameworks that are used in the management of business processes, namely ITIL and COBIT frameworks. The reason for this selection is because they are well understood by the participating organisation, and constitute the core of services rendered to their customers, and also because they are applied across different industries and are considered as best practices.

With regard to the selection of frameworks, there are many frameworks that are used in the business processes development and management. Including the following discussed by Holtsnider and Jaffe (2007:16-20):

- COSO Framework for internal control which discusses the components such as internal environment, objective setting, event identification, risk assessment, risk response, control activities, information and communication and monitoring.

- Capability Maturity Model Integration (CMMI) which is a framework for processes improvement developed at Carnegie Mellon University's Software Engineering Institute. CMMI has the five maturity levels on which processes can be measured to determine their performance level. These levels include initial, managed, defined, quantitatively managed, and optimising.

- Six Sigma, which was developed mainly for manufacturing industry as a process for measuring defects and working toward eliminating them. This framework as two methodologies, each with its own purpose and phases:
    - DMAIC: is used for the refinement of existing processes and named used after its five phases:
        1. Define the project goals and customer (internal and external) deliverables.
        2. Measure the process to determine current performance.
        3. Analyse and determine the root cause (s) of the defects.
        4. Improve the process by eliminating defects.
        5. Control future process performance.
    - DMADV: which is used for the creation of new processes and has also five phases:
        1. Define the project goals and customer (internal and external) deliverable.
        2. Measure and determine customer needs and specifications.
        3. Analyse the process options to meet customer needs.

4. Design (detailed) the process to meet customer needs.
5. Verify the design performance and ability to meet customer needs.

To these three generic frameworks, they are other frameworks that are developed and used by specific organisations for their own business use. To this list we include frameworks such as The IBM Process Reference Model for Information Technology (PRM-IT) IBM (2008) and Enhanced Telecom Operations Map (eTOM).

- The IBM Process Reference Model for Information Technology (PRM-IT): is a framework developed by IBM with a purpose of creating processes that align IT with business gaols. This model is made up of the following components:
    - Assessment: this component relies on COBIT for tools to assess and measure the IT processes in a business and Malcolm Baldrige Award for assessment of seven aspects of process implementation and results
    - Content: this component rely on eCSM, ITIL, and CMMI for the following services:
        - eSCM – describes best practices in IT service provision sourcing relationships.
        - ITIL – a framework of best-practice guidance for IT Service Management.
        - CMMI – Consists of best practices that address product development and maintenance.
    - Quality: this component relies on ISO 9000 for requirements on the design and delivery of processes. It also relies on Six Sigma for root-cause analysis to identify process improvements.
- Enhanced Telecom Operations Map (eTOM): this is an ongoing initiative of the TeleManagement Forum specific standard for business processes development in the telecommunications industry. It describes the full scope of business processes required by a service provider and defines key elements on how they interact in the industry.
-

According to Jiejin (2009), eTOM has seven end-to-end processes which are grouped in the following three main processes:

- Fulfilment: this process transforms customers' needs into solution by providing them with product that satisfies their needs.
- Assurance: based on service level agreement with customer, this process ensures that the service rendered to the customer performs continuously and performs maintenance activities.
- Billing and revenue management: this process involves the activities related to the monitoring of customers product usage, billing, and collection of payments.

It is important to note that the adoption of each of the above and other related frameworks is a question of matching the challenge experienced by the organisation and its resources availability and in other cases the industry in which the organisation is operating. However, some frameworks are used in different industries (such as ITIL, COBIT, CMMI, Six Sigma) and others are used in specific industry (such as eTOM), and others for specific product (such as IBM – PRM-IT).

For the purpose of this research, only ITIL and COBIT are discussed in more details in the following sections. The reason for this discussion is that these two frameworks are considered as the best practices and can be used in different industries as they are independent of product and platform.

2.3.1 INFORMATION TECHNOLOGY INFRASTRUCTURE LIBRARY (ITIL)

This section presents the ITIL management framework, starting from its history to how it contributes to processes management.

2.3.1.1 History of ITIL

The ITIL framework originates from the Central Computer and Telecommunication Agency (CCTA), now the Office of Government Commerce (OGC) in the United Kingdom (UK). The agency developed this

set of best practice standards for ICT service management in the late 1980s (Violino, 2005 as Cited by Tshinu, 2007).

ITIL started as a guide for the UK government in its IT endeavours, and the framework has proved to be useful to organisations in all sectors through its adoption by many companies as the basis for ICT service management, as well as consultancy, education and software tools support. Today, ITIL is known and used worldwide (UK – OGC, 2001:1 as Cited by Tshinu, 2007).

According to ITIL Survival (2006), the goal was to develop an approach that would be vendor-independent and applicable to organisations with different technical and business needs. It was developed after the UK government determined that the level of ICT service quality provided to them was not sufficient.

The ethos behind the development of ITIL is the recognition that increasingly, organisations are becoming dependent on ICT in order to satisfy their corporate aims and meet their business needs. This increasing dependency leads to a growing requirement for high quality ICT services. In this context quality means being matched to business needs and user requirements as these evolve on daily basis (Graham *et al.*, 2002).

According to Best Management Practice (2007) as Cited by Tshinu (2007), the Information Technology Infrastructure Library (ITIL) is the most widely accepted approach to ICT service management in the world. Providing a cohesive set of best practice guidance drawn from the public and private sectors across the world, it has recently undergone a major and important reorganisation, where the new version (third) has been released with the following five sections:

- Service strategy.
- Service design.
- Service transition.
- Service operation.
- Continual service improvement.

2.3.1.2 Definition of ITIL

Information Technology Infrastructure Library (ITIL) is a collection of planning, delivery, and management of ICT services. It is not a standard but a framework whose purpose is to provide ICT organisations with tools, techniques, and best practices that help them align their ICT services with their business objectives (Perot Systems, 2006:1) as cited by Tshinu (2007).

BMC Software (2006) as cited by Tshinu (2007) mentions in relation to alignment ITIL has a set of best practice guidelines to align people, processes, and technology to improve service management efficiency. It provides guidance on a common set of best practices, and each implementation of ITIL is different and can change based on the needs of the organisation.

Graham *et al.* (2002) define ITIL as a set of guides on the management and provision of operational ICT services. ITIL provides a comprehensive and consistent set of best practices for ICT Service Management, promoting a quality approach to achieving business effectiveness and efficiency in the use of information systems. ITIL is based on collective experience of commercial and governmental practitioners worldwide. This has been distilled into one reliable coherent approach, which is fast becoming a de facto standard used by some of the world's leading businesses.

2.3.1.3 Benefits of ITIL

The ITIL is a set of sections describing good practices on how to manage ICT services delivery. According to UK – OGC (2007) as cited by Tshinu (2007), ITIL delivers tried and tested processes that ensure predictable, repeatable, and reliable outcomes in ICT, thus ensuring the delivery of value to the business and benefits include such as:

- Improved use of ICT investments.
- Integration of business and ICT value.
- Portfolio driven service assets.

- Clear demonstration of ROI.
- Agile adaptation and flexible service models.
- Performance measures that are business value based.
- ICT Service Assets linked to business services.

To the above list, Pink Elephant (2004) as cited by Tshinu (2007) adds the following:

- Improved productivity and better use of ICT infrastructure.
- Quality approach to ICT services.
- Reducing the risk of not meeting business requirements for ICT services.
- Reduced costs when developing procedures and practices within an organisation.

ITIL provides a comprehensive and consistent set of best practices for ICT Service Management, promoting a quality approach to achieving business effectiveness and efficiency in the use of information systems (Graham *et al.*, 2002).

ITIL Survival (2006) as cited by Tshinu (2007) mentions that Gartner measurements show that the overall results of moving from no adoption of ICT Service Management to full adoption can reduce an organisation's Total Cost of Ownership by as much as 48%.

According to Trujillo (2007) as cited by Tshinu (2007), ITIL Version three is implementation-oriented as a result of the move from an emphasis on process to service as opposed to the previous version. To this view, APM Group (2007) says that ITIL advocates that IT services must be aligned to the needs of the business and underpin the core business processes.

2.3.1.4 ITIL and quality

Concerning quality, ITIL Survival (2006) as cited by Tshinu (2007) states that, "ITIL is based on the need to supply high-quality services with an emphasis on

customer relationships". The ITIL's philosophy is also based on quality systems, including the ISO-9000 series and Total Quality Frameworks, such as that of the European Foundation for Quality Management (EFQM). All the service delivery and support processes, from the Service desk to Service Level Management, inter-relate to provide a seamless flow of information that helps to ensure ongoing service quality.

2.3.1.5 Description of ITIL framework

The current version of ITIL is version 3 which replaced version 2 since 2007. The following section discussion the new version of ITIL.

2.3.1.6 ITIL version 3

The current version of ITIL, which is version 3, has replaced version 2 since May 2007 and is structured in the five publication, Service strategy, Service design, Service transition, Service operation, Continual service improvement.

1. Service strategy

According to the UK – OGC (2007a:8), the service strategy volume of ITIL provides guidance on how to design, develop, and implement ICT not only as an organisational capability but also as a strategic asset. The guidance is provided on the principles underpinning the practice of service management policies, guidelines, and process across the ITIL service lifecycle.

The service strategy guidance is useful in the context of service design, service transition, service operation, and continual service improvement. It covers topics such as the development of markets (internal and external), service assets, service catalogue; and implementation of strategy through the lifecycle. Financial management, service portfolio management and strategic risks are among other major topics addressed in the service strategy volume (UK – OGC, 2007a:8, 29-52) as cited by Tshinu (2007).

The service strategy covers principles such as value creation, service provider types, service assets, service structures, and service strategy fundamentals.

2. Service design

The service design publication forms part of the overall ITIL service management practices and covers the design of appropriate and innovative ICT services to meet current and future agreed business requirements. It describes the principles of service design and looks at identifying, defining and aligning the ICT solution with the business requirements (UK – OGC, 2007b:4, 57-149) as cited by Tshinu (2007).

The design publication discusses the fundamentals of the design processes and following are five aspects of the design:

- Services.
- Design of service management systems and tools, especially the service portfolio.
- Technology architectures and management systems;
- Processes.
- Measurement methods and metrics.

The service design includes the following processes:

- Service catalogue management.
- Service level management.
- Capacity management.
- Availability management.
- ICT service continuity management.
- Information security management.

3. Service transition

The service transition publication ensures that the transition processes are streamlined, effective and efficient so that the risk of delay is minimised. It establishes assurance of the expected and actual service deliverables, and integrated elements (such as applications, infrastructure, knowledge, documentation, facilities, finance, people, processes, skills) that each service

depends on to deliver and operate the service successfully (UK – OGC, 2007c: 4, 33-145).

The service transition publication contains the processes such as transition planning and support, change management, service asset and configuration management, release and deployment management, service validation, evaluation, and knowledge management.

4. Service operation

The service operation publication of ITIL is responsible for control assurance in ICT services provided. It ensures that the balance in service provided is achieved.

The service operation can be viewed as the 'factory' of ICT. This implies that a closer focus on the day-to-day activities and infrastructure that are used to deliver services. This publication is based on the understanding that the overriding purpose of service operation is to deliver and support services such as management of infrastructure and the operational activities (UK – OGC, 2007d: 3, 33-72) as cited by Tshinu (2007). This publication contains processes such as event management, incident management, request fulfillment, problem management, access management, and operational activities of processes covered in other lifecycle phases.

5. Service continual improvement

The change in different aspects of business aspects such as technology, legal requirements, and customers' requirements has put pressure on business organisations to continually improve their products and services to gain customers' loyalty.

The service continual improvement publication provides instrumental guidance in creating and maintaining value for customers through better design, introduction, and operation of services (UK – OGC, 2007a: 9).

The UK – OGC (2007e: 41-91) provides the following processes as part of Service Continual Improvement (SCI) publication:

- The 7-Step improvement process (based on vision, strategy, tactical goals, and operational goals):
    - Define what you should measure.
    - Define what you can measure.
    - Gather the data based on questions: Who? How? When? Integrity of data?
    - Process the data frequency? Format? System? Accuracy?
    - Analyse the data relation? Trends? According to plan? Target met? Corrective action?
    - Present and use the information, assessment summary, action plans.
    - Implement corrective action.
- Service reporting.
- Service measurement.
- Return on investment for CSI.
- Business questions for CSI.
- Service level management.

The following section describes some limitations related to the ITIL framework.

2.3.1.7 ITIL limitations

The following are some of the views presented as the limitations of ITIL framework:

- The Art of Service (2008) indicates that ITIL is mainly operational in nature (how-to); this is why it is supported by other frameworks when implemented (such as COBIT as in the case of this research).

- Worthen (2005) points out the following limitations, the biggest fault that users find with ITIL is that while it contains best practices for ICT

management, it is essentially just a list of things companies should be able to do. The author confirms also that "You don't implement ITIL, you use it to help create organisational change."

- Transformation: ITIL does not offer guidance on how to actually apply the best practices, it catalogues; each organisation must design its own processes based on ITIL principles. ITIL does not offer any advice on how to actually implement the best practices, it catalogues; a lacuna that can be shocking to CIOs who are used to highly detailed software development methodologies (Worthen, 2005).

The summary on ITIL can be taken from the words of McGrane as cited by Worthen (2005), stating that to run ICT like a business, you need to understand the key services that go into it. ITIL makes that work visible. It allows you to measure what is important, so you can emphasise the aspects that add value and take out those that do not.

2.3.1.8 ITIL and Processes Development

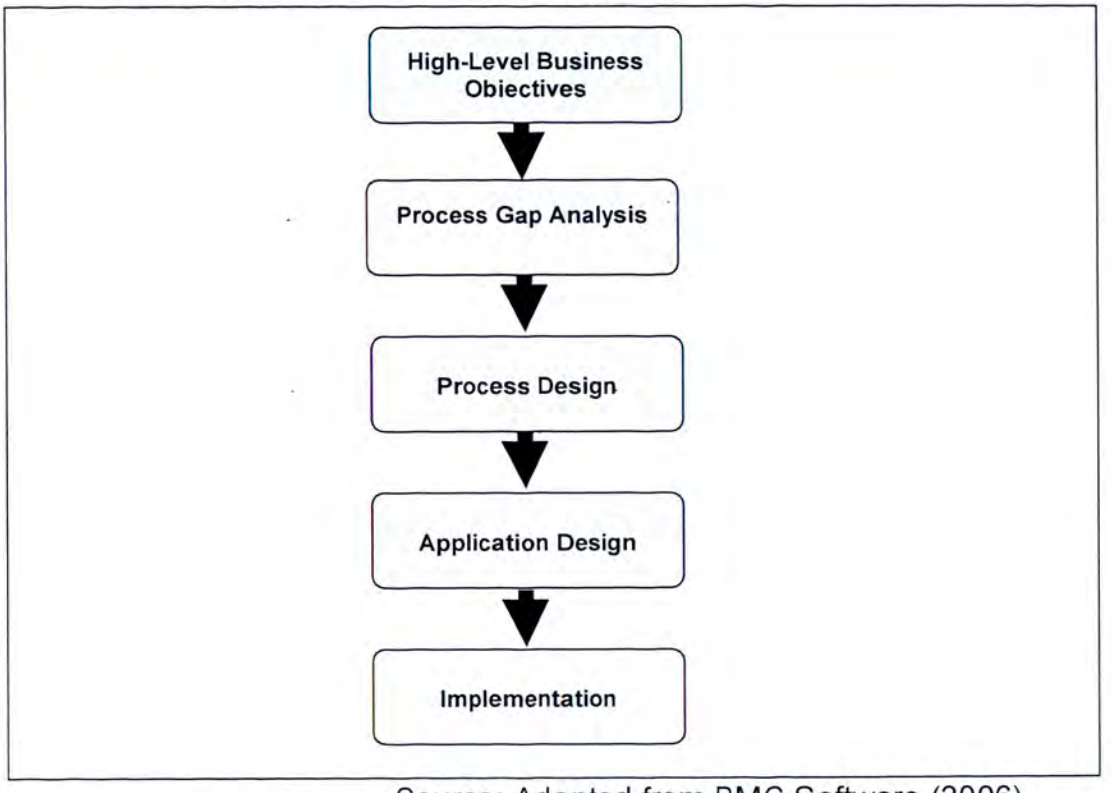
ITIL should be implemented as part of a flexible business methodology that wraps around business process, yet at the same time, enhances service management process and effectiveness. It provides a process-driven approach with the main goals of helping organisations reduce overall management and support costs, and improving business models to enable a higher quality IT services (BMC Software, 2006).

As businesses operating in the current information age rely on IT tools to deliver services and products to their customers, so has the adoption of ITIL by businesses organisations as standard and best practices for the delivery of IT services (Holtsnider and Jaffe, 2007:217). As the management of IT, people, and process as part of IT services activities, ITIL is providing a set of best practices that align business to IT infrastructure, people, and processes to improve its efficiency and achieve its goals.

2.3.1.8.1 ITIL processes

The standard ITIL process development practices are developed to support the introduction of IT tools to support business operations. BMC Software (2006) as cited by Tshinu (2007) mentioned that the process starts with what the company wants to achieve (business objectives), and goes down to the implementation of the process in the organisation.

Figure 2.1: Standard process methodology



Source: Adapted from BMC Software (2006).

The processes in the methodology presented in figure 2.1 above can be explained as follows:

1. High-Level Business Objectives: is a definition of desired business outcomes that processes need to support to their attainment.
2. Process Gap Analysis: review of a current processes to identify where they drop short for improvement.
3. Process design: is a detailed set of steps to define the process, plan for required resources and training, and obtain management commitment and signoff.

4. Application Design: this includes translating the detailed processes into an application customisation project and defining the key tasks and milestones required for implementing desired processes into a chosen application.
5. Implementation: this includes implementing the application customisation project and process improvement where appropriate.

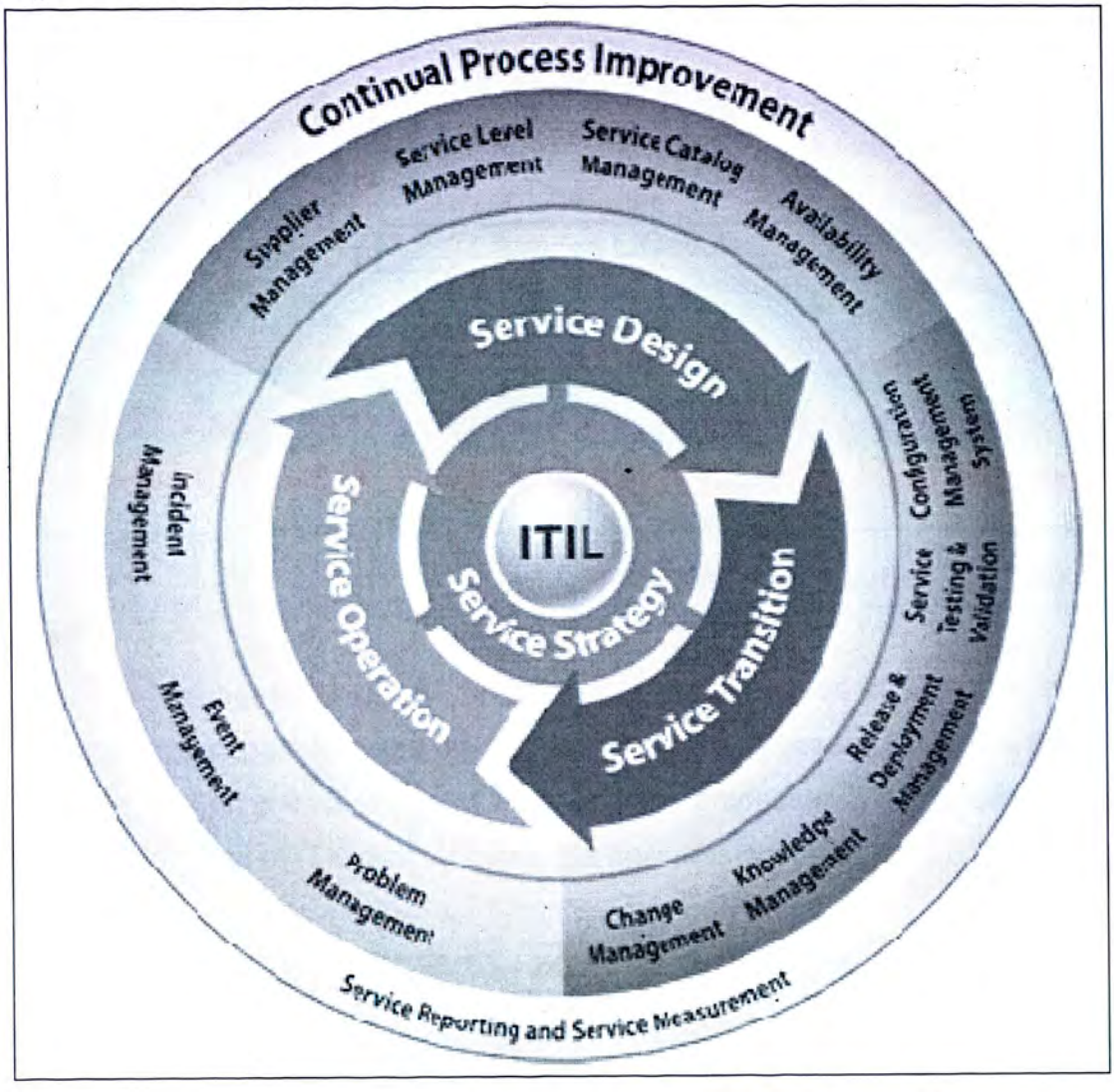
Process design and application design are two different tasks. Where the Process design is an exercise to determine the process optimisation required to best support the business operations. It is an application independent task focusing on identifying how IT can help the organisation in achieving its goals. Only when it has been completed, the application design can then begin. This translates business processes into application development project plans.

2.3.1.8.2 ITIL Service Lifecycle

The ITIL lifecycle encompasses all the processes found in the five books of the frameworks grouped according to their main domain. The five domains are organised to facilitate the understanding of the flow of the cycle for the implementation of the framework from service strategy processes, service design processes, service transition processes, service operation processes, to continual service improvement processes.

As presented by IET Solutions (2008) as cited by Tshinu (2007), the service lifecycle includes all the five domains of the frameworks with their related processes separated, but all incorporate the continual improvement activities that need to be monitored as the processes are functioning.

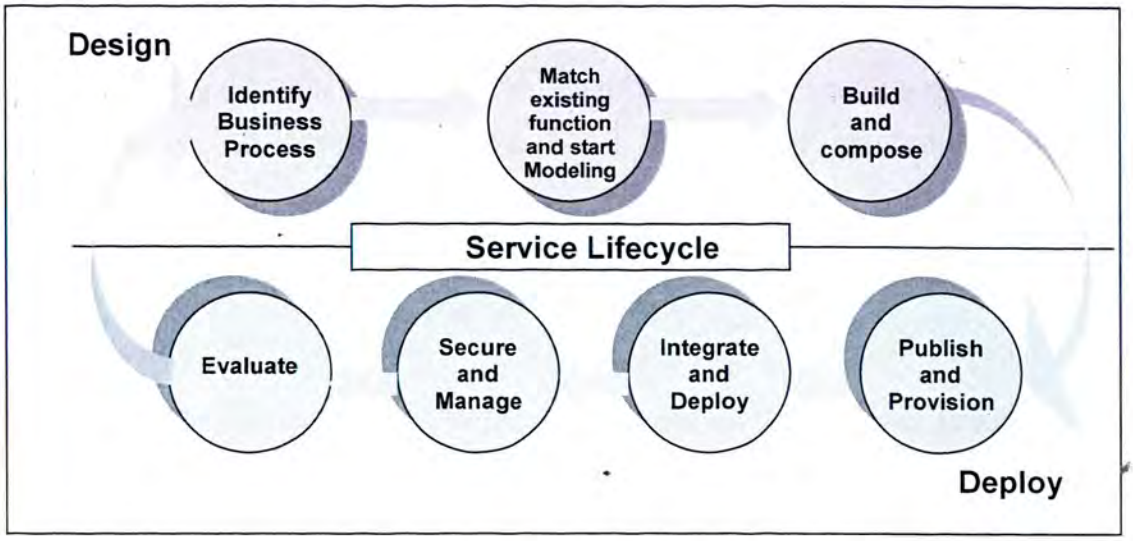
Figure 2.2: ITIL Lifecycle diagram



Source: IET Solutions (2008).

The lifecycle can be implemented in the flow of activities as presented in the following diagram. It starts with the identification of business process, to the evaluation of the implemented process.

Figure 2.3: ITIL Service Life Cycle



Source: Adapted from Interfacing (2008).

Figure 2.3 is based on the IT processes; it is subdivided in two main parts, where the first part focuses on the design of the process, while the bottom part focuses on the deployment of developed processes. It is applied to all the five domains of ITIL that describe the business processes.

2.3.2 CONTROL OBJECTIVES FOR INFORMATION AND RELATED TECHNOLOGY (COBIT)

The Control Objectives for Information and Related Technology (COBIT) framework was developed by the Information Systems Audit and Control Foundation (ISACF) in 1996 to advance business orientation in strategic alignment, value delivery, performance management, risk management, and to ensure that business executives have sufficient control over ICT infrastructure. Its other aim was to ensure that ICT delivers support to business on a continual basis. It is not a technical framework, but resides in the managerial realm.

2.3.2.1 History

The Information Systems Audit and Control Foundation (ISACF) first published COBIT in 1996. The 2nd Edition, reflecting an increase in the

number of source documents, a revision in the high-level and detailed control objectives and the addition of the Implementation Tool set was published in 1998. The 3rd Edition of COBIT marks the entry of a new primary publisher for COBIT: The IT Governance Institute (ITGI), founded by Information System Audit and Control Association (ISACA) in 1998 in order to advance the understanding and adoption of IT governance principles (IT Governance Institute, 2000:18) as cited by Tshinu (2007).

COBIT 4.1 is the most recent version of the framework; it was released in 2007 with emphasis on regulatory compliance. It helps organisations to increase the value attained from ICT. It also enables alignment and simplifies implementation of COBIT framework. It presents activities in a more streamlined and practical manner, so that continuous improvement in ICT governance is easier than ever to achieve (IT Governance Institute, 2007a) as cited by Tshinu (2007).

COBIT has become an important tool for ICT management in their quest to improve the alignment of ICT with the business. The enhancements introduced with COBIT 4.1, as well as the enhancements to the supporting toolset provide ICT managers and ICT process owners with powerful and pragmatic 'best practice' advice on how to establish ICT governance in their organisations. COBIT enables ICT management to adopt a systematic approach to add value to the business, and to manage ICT's risk, resources and performance (Analytix, 2007) as cited by Tshinu (2007).

To prevent the over-estimation of the new version of COBIT to its previous version, IT Governance Institute (2007b) mentions that COBIT 4.1 can be used to enhance work already done based upon earlier versions; it does not invalidate that previous work. The reason behind this statement is to show that there is no major modification that can totally undermine the previous publications of the model.

The changes introduced with COBIT 4.1 mainly include streamlined control objectives, streamlined application controls, improved process controls, and an enhanced explanation of performance measurement (Analytix, 2007).

2.3.2.2 Definitions

In order to understand the flow of COBIT processes, IT Governance Institute (2000:12) provides the following definitions related to the framework components:

- Control: It is defined as policies, procedures, practices and organisational structures designed to provide reasonable assurance that business objectives can be achieved and that undesired events can be prevented or detected and corrected.

- ICT Control Objective: Is a statement of desired result or purpose to be achieved by implementing control procedures in a particular ICT activity.

- ICT Governance: It is defined as a structure of relationships and processes to direct and control the enterprise in order to achieve the enterprise's goals by adding value while balancing risk versus return over ICT and its processes.

According to IT Governance Institute (2007b) as cited by Tshinu (2007)., COBIT is an ICT governance framework and supporting toolset that allows managers to bridge the gap between control requirements, technical issues and business risks. It enables clear policy development and good practice for ICT control through organisations, by providing a framework to ensure that:

- ICT is aligned with the business.
- ICT enables the business and maximises benefits.
- ICT resources are used responsibly.
- ICT risks are managed appropriately.

2.3.2.3 COBIT mission

IT Governance Institute (2007a) describes the COBIT mission as being to research, develop, publicise and promote an authoritative, up-to-date, internationally accepted ICT governance control framework for adoption by enterprises and day-to-day use by business managers, ICT professionals and assurance professionals.

The primary emphasis of COBIT is to ensure that information needed by business is provided by technology and that the required assurance qualities of information are met. COBIT 3rd Edition has evolved and improved in its guidance to incorporate the essential elements of ICT governance and risk management (Frederick *et al.*, 2004:5).

Justifying the idea that ICT governance supports the organisation and its operations. IT Governance Institute (2007a) states that ICT governance provides the structure that links ICT processes, ICT resources, and information to enterprise strategies and objectives.

The Institute adds that ICT governance is integral to the success of enterprise governance by assuring effective and efficient measurable improvements in related enterprise processes. ICT governance enables the enterprise to take full advantage of its information, thereby maximising benefits, capitalising on opportunities and gaining competitive advantage.

2.3.2.4 ICT Governance focus area

The ICT governance has shifted from the merely technical operation of ICT department to the more executive realm. This is the case in the following focus areas as presented by IT Governance Institute (2007a):

- Strategic alignment: it focuses on ensuring the linkage of business and ICT plans, on defining, maintaining and validating the ICT value proposition, and on aligning ICT operations with enterprise operations.

- Value delivery: is about executing the value proposition throughout the delivery cycle, ensuring that ICT delivers the promised benefits against the strategy, concentrating on optimising costs and providing the intrinsic value of ICT.

- Resource management: is about the optimal investment in, and the proper management of critical ICT resources: processes, people, applications, infrastructure and information. Key issues relate to the optimisation of knowledge and infrastructure.

- Risk management: requires risk awareness by senior corporate officers, a clear understanding of the enterprise's appetite for risk, transparency about the significant risks to the enterprise, and embedding of risk management responsibilities into the organisation;

- 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.

2.3.2.5 Components of COBIT

IT Governance Institute (2008) presents and describes briefly the following four sections that make up the COBIT 4.1 framework as presented in Table 2.1 below; only the framework is described in detail as it contains the most technical information in its implementation.

Table 2.1: COBIT publications

N°	PUBLICATION	DESCRIPTION
1	Executive Overview	It provides key information on the key concepts and principles of COBIT. Also, a full overview of other key areas of the framework is provided.
2	The Framework	It defines the COBIT framework. Also provides an overview of the core components, processes, controls and relationships among processes, goals, and metrics.
3	Core Content (Control Objectives, Management Guidelines, and Maturity Models)	The core content of the COBIT manual is divided according to the 34 IT processes described in different four pages, each focusing on different aspects of governance such as: • Page one: covers the high-level control objective for the process – process description, objectives, goals, metrics, practices, and mapping of the process to process domains, information criteria, IT resources and IT focus areas. • Page two: detailed control objectives for the process. • Page three: management guidelines, process inputs / outputs, a RACI (Responsible, Accountable, Consulted and/or Informed) chart, goal and metrics, and • Page four - The maturity model for the process.
4	Appendices	Mappings and cross-references, additional maturity models information, reference material, a project description and a glossary.

2.3.2.6 COBIT framework

Presenting the COBIT 4.1 framework, IT Governance Institute (2007a) indicates that COBIT focuses on the structure linking ICT processes, resources, and information to enterprise strategies and objectives. COBIT identifies 34 key ICT Control Objectives and groups them under four

categories or domains (Plan and organise, Acquire and implement, Deliver and support, and Monitor and evaluate), these are described in Table 2.2 below.

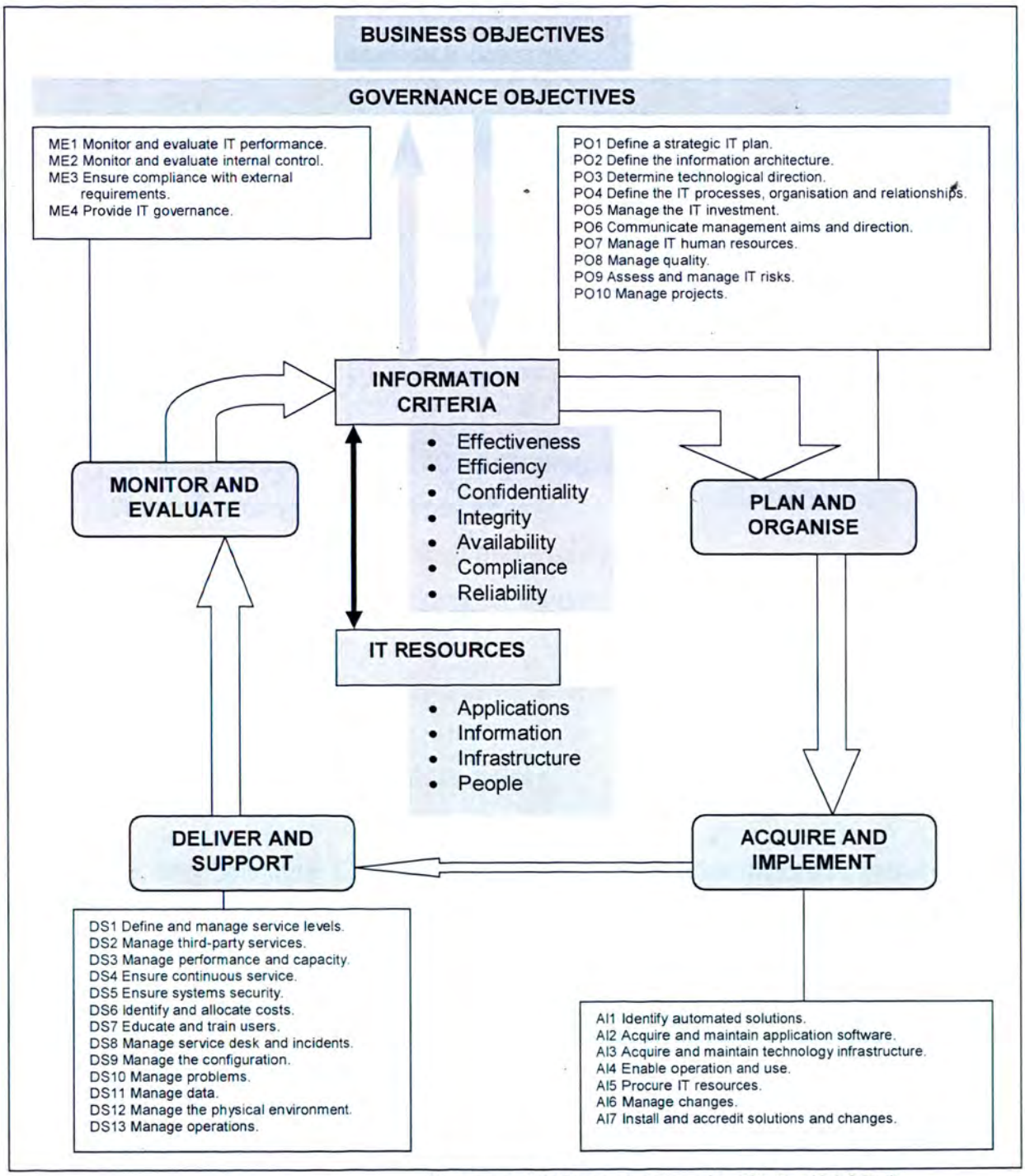
Table 2.2: COBIT domains

N°	DOMAIN	DESCRIPTION
1	Plan and organise	This domain covers strategies and tactics and concerns the identification of the way ICT can best contribute to the achievement of the business objectives.
2	Acquire and Implement	To realise the ICT strategy, ICT solutions need to be identified, developed, or acquired, as well as implemented and integrated into the business process. In addition, changes and maintenances of existing systems are covered by this domain with an objective of making sure that the life cycle is continued for the systems.
3	Deliver and Support	This domain is concerned with the actual delivery of required services, which range from traditional operations over security and continuity aspects to training. In order to deliver services, the necessary support processes must be set up. This domain includes the actual processing of data by application systems, often classified under application controls.
4	Monitor and evaluate	All ICT processes need to be regularly assessed over time for their quality and compliance with control requirements. This domain addresses management's oversight of the organisation's control process and independent assurance provided by internal and external audit or obtained from alternative sources.

Figure 2.4 presents the COBIT 4.1 framework and how different control objectives are linked to their respective domains. The underpinning concept of the COBIT framework is that control in ICT is approached by looking at information that is needed to support the business objectives or requirements,

and by looking at information as being the result of the combined application of ICT-related resources that need to be managed by ICT processes (IT Governance Institute, 2000:13).

Figure 2.4: COBIT 4.1 framework



Source: IT Governance Institute (2007a)

As presented in the framework, COBIT 4.1 is subdivided in four domains, and 34 high level processes that cover 210 control objectives. All of these elements of the frameworks ease the decision-making for IT managers and auditors in making strategic IT plan, defining the information architecture, managing the IT supplies, ensuring continuous IT service, and monitoring the performance of IT system implemented to support the operations of the organisation, including its business processes.

2.3.2.7 Benefits of implementing COBIT

As any other management tool, the implementation of COBIT framework is accompanied by the following benefits as presented by IT Governance Institute (2007a):

- Better alignment of ICT and business strategies based upon a business focus.
- An understandable view of ICT for management.
- Clear ownership and responsibilities.
- General acceptability with third parties and regulators.
- Shared understanding among all stakeholders based on a common language.
- Fulfillment of the COSO requirements for the ICT control environment.

2.3.2.8 COBIT Strengths and Limitations

IT Governance Institute (2007a) indicates that enterprise activities require information from ICT activities in order to meet business objectives. Successful organisations ensure interdependence between their strategic planning and their ICT activities. COBIT provides good practices for the management of ICT processes in a manageable and logical structure. It meets the multiple needs of enterprise management by bridging the gaps between business risks, technical issues, control needs, and performance measurements requirements.

Anthes (2004) indicates the following strengths and limitations related to COBIT framework:

- Strengths: COBIT has good checklists for ICT; it enables ICT to address risks not explicitly addressed by other frameworks and to pass audits. It can work well with other quality frameworks, especially ITIL.
- Limitations: COBIT mentions what to do, but do not specify how to do it. It does not deal directly with software development or ICT devices. It does not provide a road map for continuous process improvement.

In general, COBIT is internationally accepted as good practice for control over information, ICT and related risks. COBIT is used to implement governance over ICT and improve its controls. It contains control objectives, audit guidelines, performance and outcome metrics, critical success factors and maturity models (Analytix, 2007) as cited by Tshinu (2007).

2.3.2.9 COBIT and Processes Development

Developed based on global industries standards and best practices, the Control Objectives for Information and related Technology (COBIT) is a globally accepted set of tools organised into a framework that executives and IT professionals at all organisations can use to ensure that IT is helping them in achieving their goals and objectives.

COBIT enables enterprises to direct IT for optimal advantage; it reduces IT-related risks and increase confidence in the information provided by IT. It enables clear policy development and practice for IT management, increases the value organisations can attain from ICT and helps manage compliance (ITSM Watch Staff, 2008).

COBIT with its entire four domains contains processes related to the day-to-day management of IT operations and alignment of IT to business objectives. The processes are mainly directed to IT infrastructure, to identify risks that can affect the IT operations and ensure continual operations of the organisation.

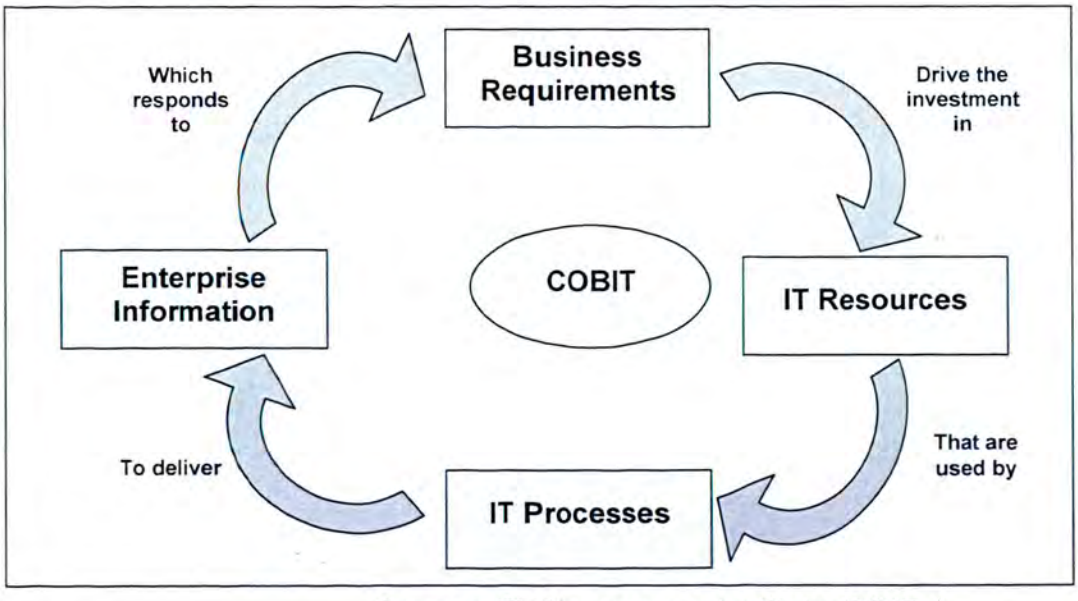
To ensure the implementation of processes, COBIT relies on its principle framework as presented in the figure 2.5 bellow.

2.3.2.9.1 Basic COBIT Principle

According to IT Governance Institute (2007a), the COBIT framework is based on the provision of information that the enterprise requires to achieve its objectives. The enterprise needs to invest, manage, and control ICT resources using a structured set of processes to provide the services that deliver the required enterprise information. Managing and controlling information are at the heart of the COBIT framework and help ensure alignment to business requirements.

To arrive at successful supply of information, an organisation needs to analyse its business requirements, IT resources, IT processes, and then arrive at information needed by the organisation as presented in the following figure 2.5 which presents basic principle of COBIT followed to deliver information.

Figure 2.5: Basic COBIT principle



Source: IT Governance Institute (2007a)

According to this figure:

- Business requirements are the driving force that require IT resources to be developed to sustain their achievement, including the processes needed to support the service delivery.
- IT resources, such as Software and hardware are developed with business processes.
- IT processes are tailored according to IT resources (Software and hardware) when developed to support business requirements, then IT processes become business processes as IT becomes backbones of the business.
- From IT processes and resources, the organisation delivers information that is needed to support business requirements.

2.4. GENERAL CHARACTERISTICS OF ITIL AND COBIT

After the description of ITIL and COBIT frameworks in general, Table 2.3 provides general characteristics that render the two frameworks to be successful in sustaining business operations.

Table 2.3: ITIL and COBIT frameworks benefits to the organisation

FRAMEWORK	BENEFITS
ITIL	ITIL provides a systematic and professional approach to the management of ICT service provision. Adopting its guidance offers users a range of benefits that include: • Reduced costs. • Improved ICT services through the use of proven best practice processes. • Improved customer satisfaction through a more professional approach to service delivery. • Standards and guidance. • Improved productivity. • Improved use of skills and experience. • Improved delivery of third party services through the specification of ITIL as the standard for service delivery in services procurements.
Source: Best Management Practice (2007).	
COBIT	COBIT supports IT governance by providing a framework to ensure that: • ICT is aligned with the business. • ICT enables the business and maximises benefits. • ICT resources are used responsibly. • ICT risks are managed appropriately. • The management has a better view and understanding of what ICT does. • There is a clear ownership and responsibilities, based on process orientation. • There is a shared understanding amongst all stakeholders, based on a common language.
Source: IT Governance Institute (2007a).	

In general, these frameworks strive to strengthen the organisation's capability in delivering required services that support business organisation in achieving its objectives in the market, mainly the development of effective process that provide quality services and products, at lower cost, and within minimum time possible.

2.5 SUMMARY

This chapter focused on a review of the literature based on business processes, their management, brief review of different frameworks referenced during the development of business process, but in more the description of ITIL and COBIT the two frameworks that have been the focus of this research. These frameworks are different from their background, the purpose of their application, and their history, but there is a common objective that is shared among them, which is the insurance and provision of effectively managing services to the organisation in supporting of its objectives in terms of ICT and processes development.

When using management frameworks, there is no restriction to using only one or two frameworks, but different frameworks can be combined to develop business processes required to provide services to customers according to the established needs.

The next chapter covers the research method selected by the author to design this study; it covers also the techniques for data collection and analysis, and it presents them in a manner that satisfies this research problem and objective.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter discusses different strategies selected to design the flow of this research at its different stages, from research philosophy to data collection and analysis. Before engaging in detail, it is worth noting the definition of what research itself is. As defined by Hornby (2000:999), research is a careful study of a subject, especially in order to discover new facts or information. In this case, the subject is BPM.

3.2 RESEARCH PHILOSOPHY

Research philosophies, referred by Hennink *et al.* (2011:11) as research paradigms are models or frameworks for observation and understanding which shape both what we see and how we understand it. In other words, they are ways of looking at reality, and they are the frames of reference we use to organise our observations and reasoning. Blanche *et al.* (2006:6) state also that the research paradigms encompass systems of interrelated practice and thinking that define for researchers the nature of their enquiry along different dimensions. They include ontology, epistemology, and methodology (the latter being all about how researchers go about practically studying whatever they believe can be known). Paradigm acts as a perspective that provide a rationale for the research that leads to a particular method of data collection, observation, and interpretation (Blanche *et al.*, 2006:40).

3.3 ONTOLOGY VS EPISTEMOLOGY

Denscombe (2010:118) states that there are three concepts which researchers need to understand because they lie at the heart of the discussions and controversies surrounding research philosophy. These are 'ontology', 'epistemology', and 'paradigm'. These research foundations, mainly ontology and epistemology have different research philosophy.

The debate of the existence of knowledge and how it is known is the debate in the academic world that needs to be carefully organised. Gomm (2008:2) says that social scientists take very different positions about the nature of reality (called ontology) and about the possibilities of knowing about this (known as epistemology).

Ontology and epistemology are defined by Miller and Brewer (2003:94) in the following way:

- Ontology: ontology explores the nature of social reality, what kinds of things can be said to exist, and in what ways, and ethics deal with what we ought to do. It refers the nature of social phenomena and the beliefs that researchers hold about the nature of social reality (Denscombe, 2010:118).
- Epistemology: epistemology is from the Greek works 'epistem', meaning knowledge, and 'logos', meaning explanation. It is concerned with the nature of knowledge and justification, how we know what we know. It refers to the ways that human create their knowledge about the social world and involves philosophical debates about the bases on which we can claim to have knowledge of social reality (Denscombe, 2010:119).

  In brief, Wills *et al.* (2007:9) clarify that ontology and epistemology are the two major branches of philosophy called metaphysics. The latter being concerned with two fundamental questions: First, what are the characteristics of existence or of things that exist (meaning the nature of reality)? And second being how can we know the things that exist? (meaning what we can know about reality).

3.3.1Research stance

For the purpose of this research, both ontological and epistemological basis of knowledge play a significant role as this study seeks to understand the concept and practice of business process management within a social environment (ontology). After the collection of the knowledge, this study moves to the point whereby it presents what has been known in form of

research outcomes and recommendations, best practices collected and models developed as part of this research (epistemology) in the social environment to help processes developers in preventing identified challenges and ensuring success during the development.

3.4 RESEARCH APPROACH

Each of the research paradigms is associated with different research approaches. As mentioned by Denscombe (2010:118), ontology and epistemology are associated with the research approaches as described in the following table 3.1.

Table 3.1: Research approaches

Ontology	Epistemology
- **Realism** ← →	**Positivism**
- Critical realism ← →	Post-positivism
- **Constructivism** ← →	**Interpretivism**
- pragmatism ← →	Mixed method

Denscombe (2010:118) mentions that debates on ontology and epistemology has been deep, complicated and sometimes abrasive but at the heart of debates surrounding the matter of ontology there two basic positions, mainly 'realists and constructionists'. At the same time there are two fundamental positions also under epistemology that link closely with the realist and constructionist positions, these are 'positivism and interpretivism'.

3.4.1 Positivism Vs Interpretivism

These two epistemological approaches to research (positivism and interpretivism) are related to realism and constructivism approaches of ontology. These approaches are defined by Denscombe (2010:119) in the following way:

- Positivism: centres on the idea of using scientific methods to gain knowledge, and it regards the observation and measurement of the properties of objects as crucial to the way we find out about social reality. This view fits with realist ontology in which social reality is regarded as something which exists 'out there' with properties that lend themselves to being objectively measured. The positivism approach in this regards fits also well with quantitative research approach, which is the selected methodology for this study.

- Interpretivism: this approach regards our knowledge of the social world as something that relies on human capacities to literally 'make sense' of a reality, which of itself has no inherent properties, no order, and no structure. This approach maintains that the knowledge we have about reality is something that is produced, rather than being discovered. Only through interpreting the world do we come to know anything about it. This approach is related to constructivist ontology.

3.4.2 Research stance

For this research, given that the researcher tends to discover first the practice and reality on business processes management then make final conclusion to predict the future behaviour in process management where what has been collected as part of this research is provided to process developers to improve their practices. Therefore, the interpretivism research approach has been selected. Jankowicz (2005:111) supports this stance by explaining that the purpose of the interpretivism enquiry is to gain sufficient understanding to predict future outcomes (process development and management standard as in this research). On the other hand, Blanche *et al.* (2006:7) say that interpretivist and constructionist research typically prefers an inductive approach. Here, the researcher starts with a set of vague speculations about a research question and tries to make sense of the phenomenon by observing a set of particular instances. This is opposed to the deductive emphasis of positivism approach (in which hypothesis and theories are tested).

3.5 RESEARCH DESIGN

Research design is a deliberately planned 'arrangement of conditions for analysis and collection of data in a manner that aims to combine relevance to research purpose with economy of procedure (Jankowicz, 2005:196). It is a strategic framework for action that serves as a bridge between research questions and the execution or implementation of the research (Blanche *et al.*, 2006:34).

Saunders *et al.* (2007:102) list different strategies that can help to design a scientific research, including experiment, survey, case study, action research, grounded theory, ethnography, and archival research. Jankowicz (2005:198,220) categorises a case study research as part of descriptive research design group. It arouses of the desire to comprehend social phenomena in both their complexity and natural context (Miller and Brewer, 2003:22). Using a case study, issues are explored in the present and in the past; as they affect a relatively complete organisational unit (single case) or group of organisational units (comparative case study); which represent different possibilities or stances of for the organisation concerned; and which you look to the future by means of the recommendations you make (Jankowicz, 2005:220-221).

For this research project, the chosen research design is a multiple case study research strategy. This choice is founded on the basis that it is connected to this research paradigm selected and research approach. In describing the elements of the research process, Gray (2009:33) links the case study (even though classified as research methodology) under the epistemology and interpretivism research groups. Maylor and Blackmon (2005:245) precise that a single case study focuses on a single unit of analysis such as a corporation or any other single entity. Yin (2009) also comments on the advantage of multiple case studies that they are more robust that single case and can strengthen the external validity. In the case of this research, our focus is on the practices of business processes development and their management as practiced by different participants to this research (six cases).

3.6 RESEARCH DATA COLLECTION AND ANALYSIS

Data collection and analysis are two of the concepts that every researcher needs to understand and effectively integrate in research process so that the outcome can be reliable. This section discusses the research techniques leading to data collection and analysis.

3.6.1 Qualitative vs Quantitative research

There are two general methodological approaches, qualitative and quantitative researches (Miller and Brewer, 2003:192) and Jankowicz (2005:122-123). They are distinguished at surface level on the basis of conclusion and techniques used during data collection and analysis (Blanche *et al.*, 2006:47, Teddie and Tashakkori, 2009:33). With certainty, quantitative research is based on numerical measurement of specific aspects of phenomena, while qualitative research seeks meaning and contributes to theory development by proceeding inductively (Miller and Brewer, 2003:192-193). To this, we can also refer to the connection they have from research paradigm, and research approach.

For the purpose of this research, a qualitative research approach has been selected as the methodological form of this research. The basis of this selection is based on its link to the interpretivism research approach as confirmed by Hennink *et al.* (2011:16), the authors say that "qualitative research is guided by concepts from the interpretivist paradigm and quantitative research by assumptions inherent in the positivist paradigm".

To this, Hennink *et al.* (2011:16) say that the purpose of qualitative research is to "understand why? How? What is the process? What are the influences or contexts?" In relation the research as opposed to the quantitative research whose "purpose is to measure, count, quantify a problem. How much? How often, what proportion? Relationships in data" and the former questions are in line with this research's questions. Therefore, qualitative research methodology is the selected methodology for this research.

3.7 RESEARCH STRATEGY

According to Creswell (2003:14) and White (2002:25-26), the qualitative research approach is associated with research strategies such as:

- Ethnographies, where the researcher studies an intact cultural group in a natural setting for long time, by collecting, primarily, observational data.
- Grounded theory, where the researcher attempts to derive a general, abstract theory of a process, action, or interaction grounded in views of participants in a study.
- Case studies, in which the researcher explores in depth a programme, an event, an activity, a process, or one or more individuals.
- Phenomenological research, in which the researcher identifies the "essence" of human experiences concerning a phenomenon, as described by participants in a study.
- Narrative research, which is a form of study in which the researcher studies the lives of individuals and ask one or more individuals to provide stories about their lives.

case studies (Multiple cases) has been selected as a strategy for this research as the researcher explores in depth the concept and practice of BPM as it is practiced in different organisations. In relation to this choice, Henn *et al.* (2009:70) say that cases are units of investigation. They (cases) may also refer to other units of analysis, including organisations (schools, businesses, and political parties), localities, regions, countries. The advantage of multiple cases to this research is to improve data reliability and generalisability of the study (Gray, 2009:257). This is because different participants (six cases as in this research) give their perspectives to the research questions.

3.8 DATA COLLECTION

Data in scientific research represent the basis on which the researcher's conclusion is drawn from (Blanche *et al.*, 2006:21). They are presented in different format and collected using different techniques depending on the

philosophy and approach selected as they feed into the research question and sub-questions.

Speaking on data collection techniques for qualitative methods, Blanche *et al.* (2006: 52) and White (2002:29) say that observation and interviewing are favoured by researchers working within the interpretivism and constructionist paradigms and they permit rich and detailed observations of phenomena as they emerge in specific context The researcher often uses interviews, observations, group discussions etc. Each has its strengths and weaknesses. (Blanche *et al.*, 2006: 47), and Hennink (*et al.*, 2011:16). Case study research relies on difference sources of data, including documentation, archival records, interviews, direct observation, participants observation, and physical artifacts (Gray, 2009:258-260) and (Jankowicz, 2005:59-60).

Bless and Higson-Smith (2004:103) precise that primary data are collected with the primary aim of answering the research problem posed by the researcher. This is through a direct interaction with participants and secondary data are collected through document records.

For this research, the primary data has been collected using in-depth interviews with recording devices in some cases (portable cellular phone, Sony Ericsson W200i) for future review and observations, this selection will help the researcher to understand the phenomenon of research (BPM) in the natural environment and arrive at the interpretation of the real world as required by qualitative methodology and interpretivism approach respectively. Secondary data has been collected through a review of previously collected materials on this research topic (BPM) to support primary data.

In relation to this research's objectives and sub-questions, the following Table 3.2 summarises the rational of each research sub-question and data collection technique applied to it.

Table 3.2: Research sub-questions and data collection methods

Sub-question	Rationality	Data collection method
How important is business process to the functioning of business organisation?	To depict what makes BP importance into the life of business organisation.	• Literature review • Interviews
Which management frameworks are currently used and to which extent in the development and management of business processes?	To be able to know the contribution of both framework to the management of BP.	• Literature review • Interviews
What are the specific characteristics of a business process that need to be taken care of to ensure that the processes are successfully developed?	To take account of important the important aspect that make BP To succeed or fail during the development.	• Interviews
What are the challenges experienced during the development of business processes and how are they dealt with?	To be informed in advance of challenges that all developers will face when engaged in BP development and set strategies ahead to avoid or minimise their impact.	• Literature review • Interviews
How quality is ensured during the development and management of business processes?	To ensure that best practices are identified before the actual BPM process.	• Literature review • Interviews

3.8.1 Interview technique (semi-structured)

The interview is an active method of collecting data. Rather than asking respondents to read questionnaires and enter their own answers, researchers engage with interviewees to ask the questions orally and record respondents' answers (Babbie, 2005:274). In other words, semi-structured interviews are

guided conversations questions that are asked broadly on the topic to clarify unclear issues (Wageningen, 2006).

In the semi-structured interviews, the interviewer is allowed to use probes with a view of clearing up vague responses, or to ask for elaboration of incomplete answers. Such probes may vary from "Why?" to "Could you elaborate on this?" and the respondent may be given the necessary encouragement to proceed (Welman and Kruger, 2005:161), by staying within the qualitative research questions structure.

As a technique, an interview has its advantages and disadvantages. White (2002:31) provides the following advantages and disadvantages related to the interview as a data collection technique:

3.8.1.1 Advantages of semi-structured interviews

The following advantages are noted by White (2002:31) on semi-structured interviews include the researcher ability to interact face-to-face with the interviewee, so you can clear up any misunderstandings immediately, either side can question an unclear response or question, also, during the interview the researcher can re-order the questions if something unexpected happen, the technique can be used in conjunction with other data collection techniques.

3.8.1.2 Disadvantages semi-structured interviews

The following disadvantages are noted by White (2002:31) on semi-structured interviews. They include time-consuming when taking into account the length of interview, travelling to and from interview, transcription of tapes and notes. This may limit the number of participants.

3.8.1.3 Interview Protocol

The researcher did set a protocol ahead of each interview conducted with participants to avoid or minimise any form of bias that can result as certain principles are not correctly applied or applied inconstantly. As discussed by

Gray (2009:377), this protocol insured consistency during the interview by following the principles:

- I did introduce myself and the research, and why the interview was conducted for. This was to collect relevant data to answers the research objectives.
- Describe the research project and the goals for which it was being developed for.
- The ethical code paper was handed first to the participant and explained to him. The participants were prompted from the beginning not to answer any question that seeks to endanger their position or the position of their organisation.
- A bibliographical form (appendix B) was handed to the participant to complete with his bibliographical data.
- The participants were asked a permission to record the interview. To this, a cellular phone was used to record the interviews to supplement the transcripts and the data latter transmitted on a laptop, replayed for better understanding.
- During the interview process (in an open-ended discussion format), participants were asked follow up questions whenever the answers needed clarification, and they were also allowed to ask questions to clarify any unclear question directed to them.
- The questions asked during the interviews (see appendix A) were intended to directly and indirectly answer this research objectives.

3.8.2 Data analysis

Data analysis is not a standalone aspect in a scientific research; it is an integral part of research design since it aims to transform information (data) into an answer to the original research question (Blanche *et al.*, 2006:52).

Teddie and Tashakkori (2009:252-254) discusses the following three general types of data analysis strategies related to qualitative data analysis:

- Categorical strategies: it breaks down narrative data and rearrange them to produce categories that facilitate comparisons, thus leading to

a better understanding of the research questions. It includes the techniques such as latent and manifest content analysis, constant comparative techniques, and grounded theory techniques.

- Contextualising (holistic) strategies: the techniques under this group interpret the narrative data in the context of a coherent, whole "text" that includes interconnections among statements, events, and so forth. In general, they focus on the general perspective of data rather than individually separated techniques. Under this group include techniques such as phenomenological analysis, narrative analysis, individual case analysis, ethnographic analysis, artistic analysis, metaphorical analysis, and critical theory approaches to qualitative data analysis.

- Qualitative data displays: techniques under this group are visual representations of the research themes (dominant features or characteristics of a phenomenon under study) that emerge from the research. The displays may be used to summarise themes from either categorical or contextualising strategies or as a separate data analysis scheme.

For this research, the grounded theory technique was used as a strategy for this research's data analysis. This selection is first based on the fact that grounded theory is based on principle of building theory based on the data collected (Saunders *et al.,* 2007:142) and it is directly linked to the qualitative research (Teddie and Tashakkori, 2009:70, Gray, 2009:502). This is related to this research as the researcher first collected the needed data before developing any theory to answer the research question, and also based on the fact that the qualitative research methodology selected best aligned with grounded theory based on the induction technique. The latter was used to build this research theory. (Teddie and Tashakkori, 2009:70, Saunders, 2007:142).

3.9 POPULATION AND SAMPLE

The population is the entire set of objects or people, which is the focus of the research and about which the researcher wants to determine some characteristics (Bless and Higson-Smith, 2004:84).

The focus of this research was on the organisations providing services in the way of developing business processes. Therefore, the population for this research is selected from the experts in the business processes development with experience in the applications of ITIL, COBIT, and other related frameworks and tools.

A sample is a subset of the whole population which is actually investigated by a researcher and whose characteristics can be generalised to the entire population (Bless and Higson-Smith, 2004:84). The basic idea of sampling is that by selecting some of the elements in a population, we may draw conclusions about the entire population (Cooper and Schindler, 2003:179). In this case, a collection of organisations that development and manage business processes. These organisations were represented by their experienced employees who have extensive knowledge in business processes, ITIL and COBIT frameworks (Their profile is presented in appendix B of this research).

Bless and Higson-Smith, (2004:86-93) have identified and presented two techniques for sampling a population for a study as presented in the Table 3.3 below.

For this research, the purposive sampling technique was chosen as a technique on which the participants were selected. This was based on knowledge of both business processes and management frameworks, namely ITIL and COBIT and also based on the tools and techniques specific to the organisation.

Table 3.3: Sampling techniques groups

N°	SAMPLING TECHNIQUE	DESCRIPTION
1	Probability or random sampling	It occurs when the probability of including each element of the population can be determined. It is based on the concept of random selection – a controlled procedure that ensures that each population element is given a known nonzero chance of selection. This sampling model includes the following techniques: - Simple random sampling: it provides equal opportunity to each element for being selected. - Interval or systematic sampling: it based on selection of elements at equal intervals. - Stratified random sampling: its principle is to divide a population into different groups, called strata, so that each element of the population belongs to one and only one stratum. - Cluster or multi-stage sampling: its principle is to start by sampling a population that is more general than the final one. In a second stage, one basis of the first sample, a new population is considered that is less than the first population group. The procedure continues until the population to be investigated or final sample is reached.
2	Non-probability sampling	It refers to the case where the probability of including each element of the population in a sample is unknown. It is arbitrary (non-random) and subjective. It contains the following techniques: - Accidental or availability sampling: it consists of taking all cases on hand until the sample reaches the desired size. - Purposive or judgmental sampling: is a type of non-probability sampling in which the researcher selects the units to be observed on the basis of own judgment about which ones can be the most useful or representative. - Quota sampling: its purpose is to draw a sample that has the same proportions of characteristics as the population. Instead of relying on random selection, it relies on accidental choice.

Table 3.4 provides an overview of the organisations that participated to this research. For confidentiality purpose, the participants requested not to be openly described in this research using their official names. This is the reason why the alphabetical letters were used to replace their official names, such as Candid A, and Candid B to F, and they constitute at total number of six cases.

Table 3.4: Research participants targeted sample

N°	PARTICIPANTS	INDUSTRY	DATA COLLECTION TECHNIQUE
1	Candid A	Consulting	Semi-structured interview (recorded) interview
2	Candid B	Transport	Semi-structured interview (recorded)
3	Candid C	Consulting	Semi-structured interview (recorded)
4	Candid D	Consulting	Semi-structured interview (recorded)
5	Candid E	Mining	Semi-structured interview
6	Candid F	IT systems development and consulting	Semi-structured interview

The table 3.4 lists six companied that participated in this research. They are selected from different industries and have different sizes. This is to ensure that the outcomes of this research represent broad perspective and issues related to business processes from different industries as they are applied in different industries. This is to improve reliability and achieve a fair degree of generalisability (Gray, 2009:257).

The reason for the selection of these six organisations is that they have been involved in the BPM practices for internal use or as consultants and have experience in the practice of ITIL and COBIT frameworks in the development and management of business processes.

3.10 INTERVIEWS CONDUCTED

It is worth to mention at this stage how interviews were conducted with the companies presented in Table 3.4 above in the following Table 3.5:

Table 3.5: Interviews conducted

N°	PARTICIPANTS	STAFF	INTERVIEW DESCRIPTION
1	Candid A	1	Transcripted and recorded
2	Candid B	1	Transcripted and recorded
3	Candid C	1	Transcripted and recorded and over the telephone
4	Candid D	1	Transcripted and recorded
5	Candid E	1	Transcripts only
6	Candid F	2	Transcripts only

3.11 SUMMARY

This chapter indicated the research methodology used to organise and conduct this study. It first analysed the methodology adopted and the reason for conducting this study. It secondly described the population and the selected sample from which data were collected, and the techniques used to collect and analyse data collected to arrive at conclusions.

The next chapter presents and discusses the data collected through interviews with different participants and published materials.

CHAPTER FOUR: DATA ANALYSIS AND PRESENTATION OF FINDINGS

4.1 INTRODUCTION

Following the collection of data from the reviewed literature and interviews with the participating experts, this chapter analyses and discusses the results of collected data in order to answer this research problem. This is where the analysis of data is presented in this research document. As for the grounded theory data analysis itself, the process started during the interview phase (Cooper and Schindler, 2006:209,710). As the interviews were prepared and organised in a specific folder on the researcher laptop to ensure that they are easily identifiable and accessed in the future.

According to this research, an in-depth investigation (which included interviews and observation of BPM practices) was conducted in the practices of business process management. Based on the qualitative form of this research, only information satisfying this research problem was maintained through the process of grounded theory.

A list of interview questions used during the data collection is presented in Appendix A. Other associated strategies such as secondary data reviewed are presented in literature review (Chapter Two), based on the research question proposed.

This chapter is devoted to the analysis of empirical data collected during the interaction of participants. It describes the grounded theory approach followed to analyse the data, the analysis of the data, the findings, and the summary to the chapter.

4.2 GROUNDED THEORY AND CODING

The analysis of data followed the grounded theory process as demonstrated by Hennink *et al.* (2011:209-292) and summarised in the following table 4.1, and what follows is an explanation of each step. It is important to note that

the table and discussion is based on the steps applied to data rather than a list of general analytic tasks as presented by the authors as some of the steps where combined together. Appendix C at the end of this research presents the application of these steps to the data collected during the interview phase with participants.

Table 4.1: Grounded theory process

Step 1	Step 2	Step 3
Transcripts preparation and anonymisation of data	Coding, description, and comparison	Data categorisation and conceptualisation

4.2.1 Step 1: Transcripts preparation and anonymisation of data

The preparation of transcripts and anonymisation are the phases that prepare the data before the actual coding. The process of transcript preparation was started during the interview phase itself. At this stage, the researcher used pen and paper to transcript the interaction with the participant, this process continued after the interview as the researcher listened to the recorded discussion and transferred the file onto his laptop and then changing the file from .amr into pm3 file as the first format poses reading problem on computer systems that do not have quickTime software. Each recorded interview went through the same process and the transcripts were checked for completeness after each interview at the researcher own time.

As part of this research ethical principle, the participants were promised that their identities were to be coded (anonymous principle) from publication. Nevertheless, this principle (secret names) was taken in consideration in this chapter to ensure that no identity, location, or any element describing the participant is revealed in the study and published materials.

4.2.2 Step 2: Coding, description, and comparison

After the preparation of transcripts, the next stage was to ensure that the data are coded according to a key words represented by participants themselves (inductive coding). as mentioned by Hennink *et al.* (2011:216), the term code refers to an issue, topic, idea, opinion, etc., that is evident in the data. This coding has been applied to each question answered by each participant to this research. This was done to highlight ranges of issues raised by participants and for easy identification of specific issues and trends as discussed with all the participants.

Hennink *et al.* (2011:220-225) identify different strategies for developing inductive codes in qualitative researches. For the purpose of this research, in vivo strategy was used to develop the codes. With this strategy, the researcher carefully noticed phrases or metaphors used by participants when answering the questions for special meaning, and the word that was repeated or old the meaning of the phrase was selected as a code to that answer. Special attention was paid to ensure consistency throughout the coding process and for each participant.

The research data were subjected to think description to understand the context under which the participant has described them. This process was vital for this research given the background of the research participants and industry in which they are operating, and the sensitivity of the services, products, and customers they are serving. An example is on the concept of time, for the participant in the transport industry, it is much important to not forget it in the process development as this can affect thousands of people waiting for the transport, while in mining industry, this concept may be negligible if the delay is minimum, as the processes are developed for internal operations (in some cases).

While description was used to recognise and portray issues in the data, comparison was used to distinguish the data, discover patterns, and facilitate the association of common patterns. For this stage, the cross-case

comparison strategies was used to compare one code across the interviews in the coded transcripts to identify the variety of perspectives, related experiences on the single phenomenon to identify common patterns. This is where the experience of challenges experienced during processes development such as people management mentioned by different participants get recognised and associated with strategies applied by the participants to deal with the challenges.

4.2.3 Step 3: Data categorisation and conceptualisation

Even though the induction is not mentioned as part of the analysis of the data at this stage, Hennink *et al.* (2011:209) say that inductive approach to data analysis is implicitly offered within the grounded theory, it is whereby codes, concepts and theory are derived from the data.

Categorisation and conceptualisation steps are related (Hennink *et al.*, 2011:246). With the individual codes identified, the categorisation process regrouped them (coding) together to gain a broad understanding of different cases. With the conceptualisation, the data were now put together to create a conceptual understating of the model of this research presented in the Section 4.5 of this research.

4.3 SUMMARY OF FINDINGS

This section presents the findings of this research by considering relevant data collected through the literature reviews and from the empirical data with reference to this research questions.

It has been stated in previous chapter that the organisation operating in the global and fast changing environment improves its performance not just through its human capital, financial resources, and IT resources only, but also with innovative business processes that can help the organisation to respond to customers demands effectively. The later does not stand in isolation, it is part of business asset, and should be developed in alignment with the

business vision, mission, and strategies (Bieberstein *et al.*, 2008) and (Hurwitz *et al.*, 2009:65).

4.3.1 From the literature review

As mentioned in the previous section, the information collected for this research came also from previous publications on business processes management and theoretical management frameworks used to develop and manage the business processes.

4.3.1.1 Importance of business processes to the business

From the literature reviewed, no business can produce adequate outputs or any result without proper business processes. Gabhart and Bhattacharya (2008:37) say that business process acts as a conductor in an orchestra and asks the service providers to perform specific tasks. In this way, services become the building blocks of a business. Hurwitz *et al.* (2009:99) add that your business is about the products and services you offer to your customers. It is also about the processes that make you unique in how you deliver value.

To the above confirmation, it is clear that business processes are core to the internal functioning of any business and to the interaction with its stakeholders in the value. Without them, it is difficult to manage business.

4.3.1.2 Management frameworks for managing business processes

Business processes at some extent according to the industry in which they are developed for and the purpose for which they are developed for (Bieberstein *et al.*, 2008 and Hurwitz *et al.*, 2009:65). In an insurance company, claims handling is a business process. In a hospital, admitting a patient is a business process. In a furniture store, selling a cabinet is a business process. Note that a business process is not automated by definition. As the business processes are different, so are the frameworks

used to develop and manage them (Holtsnider and Jaffe, 2007:16-20) and Jiejin (2009).

For this research, different frameworks were reviewed in Chapter 2. But only COBIT and ITIL were maintained for discussion because of their usage in different industries and by business of different sizes.

4.3.1.3 Characteristics of business process

In Chapter Two, the first characteristic of business process was that of it being considered as part of organisation asset (Fassoula, 2004). In the same chapter, it has been established that business process should be clearly defined, ordered, directed to recipients, value adding to the organisation and recipients, it must be embedded in the structure, and can in some cases cross different functions. Some of the characteristics are reserved for discussion in Section 4.3.2 when discussing interview data.

4.3.1.4 Challenges experienced during development and management of business process

The surveyed literatures mention that business processes pose different challenges during their development and their management. Including the following mentioned by Rickayzen *et al.* (2005):

- Lack of adequate information, which is the blood of every organisation.
- Clarification of source and destination of knowledge in process.
- Flexibility during the operation time to address cases of emergency.
- Application of best practices during the operation of process once it is operating.
- Ensure that employees spend more time producing than learning how processes are interacting.

4.3.1.5 Addressing quality in processes

Quality means different things to different people. For this research, the quality in business processes is taken from ITIL Survival (2006) which states that ITIL is based on the need to supply high-quality services with an emphasis on customer relationships. The ITIL's philosophy is also based on quality systems, including the ISO-9000 series and Total Quality Frameworks, such as that of the European Foundation for Quality Management (EFQM). All the service delivery and support processes, from the Service desk to Service Level Management, inter-relate to provide a seamless flow of information that helps to ensure ongoing service quality. This means that by following the ITIL methodology and other frameworks such as COBIT, the company is indirectly abiding to the standards of quality management and best practices.

4.3.2 From the empirical findings

The purpose of the empirical approach was to collect the evidence through interviews (four out of six were recorded) with participants from various industry on the practices of process development. This approach was intended to confirm and supplement the theory as presented in the previous section and answer this research question with empirical evidences.

A list of interview questions discussed with the participants is presented in attachment A and the general overview of the data collected during the interviews with the participants (six cases in total) is presented in presented in appendix C at the end of this research.

After the application of grounded theory data analysis process to the responses provided by the participants, codes representing the key words from the respondents' answers were highlighted, and they represent summative views of their views on each question, they were then categorised to remove duplication and are presented in the following Table 4.2 according to the each interview question category.

Table 4.2: Interview data summary

Unit of analysis	Codes categorisation	Conceptualisation
Importance of business processes	- Standard and create understanding - Vision and mission - Enable Inputs, interrelated activities, and outputs to predict outcome - Certification - Documentation - Series of action and instructions with outcome - Create harmony and consistency - Proactive and avoid waist - Products and services - Key driver task that adds value to value chain - Meeting requirements - Guideline for the business - Best practice	Business processes are a set of actions and instructions that are documented to create harmony and standard with a purpose of enabling inputs, coordinating activities to predict outcomes (products and services) that enable the organisation to achieve its mission and vision with intent to meet the requirements of its stakeholders (internal and external).

Unit of analysis	Codes categorisation	Conceptualisation
framework(s) use to develop business process	- ITIL adapted - BMC remedy - SAP - ISO 9001:2000 - COBIT what - ITIL how - IDF0 - PRM-IT and IBM Services Model - SDLC - PMBOK process	There are different frameworks used for the purpose of developing business: - ITIL and COBIT are the most used frameworks and complement each other and can be used in different industries and businesses. - Two or more frameworks can be combined according to needs. - The adoption of framework is based on company's needs, industry, and level of maturity. The frameworks are used:

		- To facilitate reuse - To meet customers (internal and external) needs - To ensure alignment between processes and vision, mission, business objectives, and governance in services delivery - According to the needs of the business and can be adapted according to the level of the organisation's resources.

Unit of analysis	Codes categorisation	Conceptualisation
Specific characteristics of a business process	- Document processes - Explain people and soft skills and workshop - Management support - Know business and activities. - Customer needs - Best practices - Inputs, outputs, and controls. - Standards - Infrastructure - People - Flexibility to accommodate changes - Common goal - Clear understanding	These categorised codes ensure that when engaging in business processes development, the developer needs not just the technical knowledge, but also a fair degree related to the understanding of business and its goals, its environment, combined to people skills or soft skills.

Unit of analysis	Codes categorisation	Conceptualisation
Challenges experienced during the business processes development and management and strategies used to	- Misalignment due to lack of understanding: conduct Workshops and ensure stakeholders buy in and document the steps - Access to infrastructure - Engaging people: Workshop the people - Resistance: communicate, use soft skills, and technical training, engage with the people	The challenges experienced during the development and management of business processes are broad and depend on individual business situation as each business is different to another due to each structure, industry, and

manage them.	- Change management - Benchmarks and workshops - Phased deployment - Financial - Depend on business situation - People feel obsolete as knowledge being documented	composition of its resources. The strategies used to deal with these challenges are also various, some challenges are common such as communication, while others are specific such as financial.

Unit of analysis	Codes categorisation	Conceptualisation
How do you ensure quality	- SHEQ to Audit - Update documents - ITIL certification - Quality management system - Be proactive - Continuous audit - Meeting needs - KPAs or KPIs measures - Quality policies - Quality check - Training people	Quality means different things to different people and it is at the heart of each process development. As in this case, it is based mainly on the measurable KPAs at the beginning of process development. But some companies develop their own policies or rely on certification institutions for quality standards.

A summary of the interaction with the participants is presented in CD accompanying this research together with recorded files in PM3 format. The evaluation of theory and organisational practices leads to the recommendations and conclusion on this research topic.

4.3.3 Supporting the empirical findings with literature

After the analysis of interview discussions with the participants, this section provides the literature support to the empirical data:

- Business processes are made of different activities that are directed to provide value to the customers, and are not to be looked as silos of undertakings that operate individually, but as related to different departments and adding value to one another and organisation

structure as one (Fassoula, 2004). This in relation to the importance of business process unit of analysis.

- Characteristics of business processes are multiple and depend on the industry in which the organisation is operating. They are dynamic and can be influenced to change because of the external environment surrounding the organisation or internal factors as identified by the organisation and its stakeholders (Smith and Fingar, 2008). This view supports the characteristics of business processes unit of analysis.

- The concept of business processes and their management is an important element of strategic management for the organisations operating in the networked economy. To be competitive, organisation need to be flexible enough, with proven processes that focus on customers' satisfaction, starting from customers queries to the delivery of the products or services (Kotelnikov, 2008). This view supports also the characteristics of business processes unit of analysis.

- There are many business processes development tools and frameworks, some tools are developed for specific business industry while others are generic and can be used in different industries (Klimavicius, 2008). This view supports the tools or frameworks for of business processes unit of analysis.

- The selection of tools to assist in the development and management of business processes is a question of organisation experience with specific tool, and the objectives of the processes to be developed and how they align with organisation's objectives, how the selected framework (s) can assist the organisation achieving its objectives, and also the industry in which the organisation is operating.

- Because of the reliance of the business organisations on the Information Technology in the supply of services and products, processes development and management using ITIL and COBIT,

which are IT related tools or frameworks used in the supply of IT services, organisations have an easy task for developing and managing their processes as these two frameworks contain major processes and best practices to support IT and related business activities (IT Governance Institute, 2007a).

- Even if other consulting organisations have developed their own frameworks to help in their tasks of processes development, the basic methodology used in the development of business processes has not changed. It starts with the studying of the current processes, finding the gap with the targeted result, modeling the new processes, validating them, deploying the new processes, and the monitoring and continuous improvement (Interfacing, 2008). This view supports the quality assurance of business processes unit of analysis.

4.3.1.6 Using ITIL and COBIT to develop and management business processes

As mentioned in Chapter Two, ITIL and COBIT frameworks are among the best practices in business processes development and management. They provide a guideline, and align processes with business strategies, ensure that business structure integrates with designed processes (IT Governance Institute, 2007a).

ITIL is suitable to assist during processes development through the following components:

- ITIL standard process methodology: this component is based on identifying high-level business objectives, identify the gap in business process, redesign the business process to close the gap, design appropriate application, then implement the new application.

- ITIL lifecycle diagram: this is the heart of ITIL processes design and management. It starts with the strategic component, moves to the design, transition and operation to the continual process

improvement. This component helps in the creation of conceptual model for business process development and management as it matches process design phases. But as a collection of best practices, ITIL improves the process development activities.

ITIL in the development of business process can be subdivided into design and deployment components. Where the former will focus on identification of business process, modelling and development, the later component focuses on management and improvements during the operation.

COBIT contribution to process development is based on its focus areas, which are strategic alignment, value delivery, resource management, risk management, and performance measurement (IT Governance Institute, 2000). All of these areas ensure that business processes once developed, deliver value to business, and risks related to interruptions are minimised or totally removed.

4.4 REPRESENTING THE BPM CYCLE

After a critical review of theory on business process management (BPM) and review of participating organisations understanding and practices on the BPM, the researcher has understood that business processes operate in a dynamic environment with different requirements that need to be managed to ensure that they are developed according to best standard and help the organisation to achieve its objectives.

To arrive at the stage of business processes management, they must be developed, and the development itself must be in relationship with business objectives, strategies, and environment. The above leads the researcher to develop the following Figure 4.1 to explain the environment that interacts with the business processes.

Figure 4.1: The environment of business processes

According to Figure 4.1, the environment of business processes can be described in the following way:

- The cycle starts with the understanding of why the business exists through its vision, mission, and business objectives. This is required and has to be done by any person engaged in the business process development despite his or her technical knowledge, but with a good understanding of the organisation operations.
- Then understand the people (including the users, management, contractors) who deal directly and indirectly with the business and its processes.
- Evaluate the needs of the business and the stakeholders to which you are going to apply the framework and related technologies to develop business processes. This is to enable the adaptation of the framework to suit the needs of business stakeholders.
- Best practices frameworks are the tools, they are helpful only if you use them accordingly and apply them to a correctly identified needs. After the understanding of business and its people, you can then contemplate the tool or framework that can be matched to its way of doing business and resources.

- Then develop the key performance areas (KPAs) that are going to be used to measure the success of the business process. These KPAs can be based on people, technology, or any other resource that apply to the business process, which can be financial resource. Understand also the challenges that can be faced during the development of business processes and quality requirements to develop strategies proactively to remove them or minimise their impact.

The reason for addressing the technological requirements in the Figure 4.1 above is because some participants mentioned the combination of tools such as SAP and BMC remedy suit of products during the development of business processes. But in general, technological infrastructure of different form (such as Enterprise Resource Planning (ERP) and telecommunication facilities) plays a critical role in the development and management of business processes. But this research was not intended to discuss the technological aspects of business processes.

4.5 DEPICTING THE MODEL FOR BUSINESS PROCESS DEVELOPMENT AND MANAGEMENT USING ITIL AND COBIT FRAMEWORK

From the literature reviewed, it has been established in Section 2.2 in Chapter Two that business processes have complex characteristics and cross across the organisation units. In their development phases there is a strong need to ensure that they are in relationship to business objectives and strategies. Even though there is no mention on activities to be performed during the design, implementation, and continual improvement, using ITIL and COBIT frameworks principles they can be developed to ensure alignment of business processes to organisation objectives and strategies. Ensuring that risks, availability, learning and flexibility are monitored to manage challenges during the development, implementation and continual improvement of business processes.

The Table 4.3 presents a generic model showing the interaction between the systems development life cycle, COBIT, and ITIL in the development of

business processes to ensure their alignment to business vision, mission, and strategies.

The model in Table 4.3 below can solve the problem found in the development of business process in this way:

- It is including best practices throughout all the phases of processes development.
- It ensures that processes are developed only under the guidance of business objectives and strategies. This minimises the challenges of having business processes disconnected to organisational objectives and strategies.
- It ensures quality information is transmitted throughout the process. This minimises the challenges of inconsistent information being transmitted through the processes.
- The model takes account of the people aspect, this is to ensure that skills improvement, staff involvement, knowledge management takes place and stresses are managed. This minimise the challenges related to human aspect.
- It ensures that suppliers and other stakeholders are involved and informed.
- It ensures that risks are assessed before the full implementation of the process, and if unpredicted event occurs, services are not totally disrupted.

ITIL and COBIT add value into business processes development and management as they make it easy for the organisation to ensure that business processes are developed in systemic and controlled environment. The two frameworks ensure also that challenges are taken care of from the development to the improvement of business processes, and risks are analysed and minimised to maximise business performance.

Table 4.3: Model for incorporating ITIL and COBIT best practices in process development activities

ORGANISATIONAL BUSINESS VISION, MISSION, OBJECTIVES AND STRATEGIES			
Process development phases	**What it does**	**ITIL practices (How)**	**COBIT Practices (What)**
Phase 1: Planning	It is a preparatory step to business process development, it serves to streamline and organise the succeeding activities. It serves to analyse the gap in between the service expectations and what is currently delivered, analysis of scenario, and activities planning.	ITIL service strategy - To create value and link business process to organisation objective (assess the value of business processes to the organisation directions) - Evaluate financial implication - How process links to other process (service portfolio management) - Assess the risks	**PLAN AND ORGANISE DOMAIN** PO1 Define a strategic IT plan PO2 Define the information architecture PO3 Determine technological direction PO4 Define the IT processes, organisation and relationships PO5 Manage the IT investment PO6 Communication management aims and direction PO7 Manage IT human resources PO8 Manage quality PO9 Assess and manage IT risks P010 Manage projects
Phase 2: Analysis and Design	It specifies the services and business processes in a stepwise manner. It focuses on service analysis and design, service specification, process identification, and process specification.	ITIL service design describes the principles of service design and looks at: - Identifying, defining and aligning the ICT solution and processes with the business requirements - Supplier management - Service level management - Service catalog management - Availability management - ICT service continuity management - Information security management	
Phase 3: Service Realisation	This phase transforms specifications from the analysis and design phase into implementation, execution and deployment that may be traversed iteratively	ITIL service transition Ensures that the transition processes are streamlined, effective and efficient so that the risk of delay is minimised. - Transition planning and support - Change management - Service asset and configuration management; - Release and deployment management - Service validation - Evaluation - Knowledge management	**ACQUIRE AND IMPLEMENT DOMAIN** AI1 Identify automated solution AI2 Acquire and maintain application software AI3 Acquire and maintain technology infrastructure AI4 Enable operation and use AI5 Procure IT resources AI6 Manage change AI7 Install and accredit solutions and changes
Phase 4: Deployment	It aims at deploying the service and process realisations and publishing interfaces in a repository		

<table>
<tr><td>Phase 5: Execution</td><td>This phase supports the actual binding and runtime invocation of the deployed services.</td><td>ITIL service operation
It ensures that the balance in service provided is achieved.
- Event management
- Incident management
- Request fulfillment
- Problem management
- Access management
- Operational activities of processes covered in other lifecycle phases</td><td>DELIVER AND SUPPORT DOMAIN
DS1 Define and manage service levels
DS2 Manage third-party services
DS3 Manage performance and capacity
DS4 Ensure continuous service
DS5 Ensure systems security
DS6 Identify and allocate costs
DS7 Educate and train users
DS8 Manage service desk and incidents
DS9 Manage the configuration
DS10 Manage problems
DS11 Manage data
DS12 Manage the physical environment
DS13 Manage operations</td></tr>
<tr><td colspan="4">CONTINUAL PROCESS IMPROVEMENT (ITIL)
Service reporting and service measurement</td></tr>
<tr><td colspan="4">MONITOR AND EVALUATE DOMAIN (COBIT)
ME1 Monitor and evaluate IT performance.
ME2 Monitor and evaluate internal control.
ME3 Ensure compliance with external requirements.
ME4 Provide IT governance.</td></tr>
<tr><td colspan="2">INFORMATION CRITERIA (COBIT)
• Effectiveness
• Efficiency
• Confidentiality
• Integrity
• Availability
• Compliance
• Reliability</td><td colspan="2">IT RESOURCES
• Application
• Information
• Infrastructure
• People</td></tr>
</table>

4.6 SUMMARY

One main feature throughout this chapter was that business processes make part of the most important assets of the organisation. Almost all business organisations (large, medium, small, private or public, profit making or non-profit making) rely on some sort of business processes to interact and deliver their services to stakeholders. As such, business processes require firm's attention from development to the implementation to ensure that they add value to business operations and are effective and flexible.

This chapter has presented different views on the business processes management, including the views from the participants and literature review to the presentation of the environment of business process framework and the generic model for aligning SDLC phases to COBIT, ITIL, and business vision, mission, and strategies. During the data analysis it has been revealed that while there are benefits associated to the implementation of business processes, there are also challenges that need to be faced with as well. The later can be taken care of by combing communication, soft skills, and best practices found in ITIL and COBIT and those presented by participants.

This chapter has also revealed that ITIL and COBIT frameworks (adapted or not) are at certain degree the most used frameworks in the development of business processes. They ensure that proper practices are followed from the development to the support of business processes ensuring also that they are aligned with the business objectives and take account of the organisation infrastructure and stakeholders.

The next chapter (Chapter Five) provides a final conclusion and possible recommendations on the use of ITIL and COBIT frameworks in the development and management of business processes.

CHAPTER FIVE: SUMMARY AND CONCLUSION

5.1 INTRODUCTION

The current age, known as the digital information age is not just driven by technological tools and information only. It is a result of well organised combination of IT tools and information through business processes. As such, business processes are part of the important assets in the organisation that need to be well designed, organised, developed, implemented and managed to ensure smooth flow of information across departments within the organisation, between organisations, and they ensure that the activities within the organisation are harmonised and controlled to guarantee that the vision, mission, and objectives of the organisation are achieved.

To accomplish the above, internal users, suppliers, and others stakeholders need to be involved and trained about new processes to avoid negative challenges and resistances that can impact the processes from adding value to the business activities before and after the development of business processes.

This research addressed the question related to the practices of business processes development and their management as they are practiced in South Africa by applying the best practices and management frameworks such ITIL and COBIT. To accomplish this, it was necessary to answer the sub-questions derived from the research problems presented in the Section 1.3 of Chapter One.

This chapter provides a discussion on summary and conclusion of this research based on the literature review and empirical data presented in Chapter four. It also highlights areas of future research related to the field of business processes development and their management.

To achieve the objectives of this research, the researcher applied a formal research methodology using a multiple case studies research strategy and

used grounded theory to analyse the empirical data which were confirmed by published theory on business processes by various authors. This research started with the provision of background on business processes and their management, a general review of different business process development and management frameworks, but provided more details on two management frameworks selected for this research (ITIL and COBIT). Finally, in this chapter it presents a final conclusion and recommendations which are the focus of this chapter.

5.2 RESEARCH LIMITATIONS

Apart from the scarcity of resources addressing the application of ITIL and COBIT frameworks in the development and management of business processes (given that they are critical to the success of the business), the following limitations were also observed during the process of this research:

- Because of a limited number of experts in the development and management of business processes that could have been contacted for this research, six cases representing organisations from different industries represented by their senior business developers with ITIL and COBIT expertise accepted to participate to this research through open-ended interviews conducted on their sites or through telephone calls in one circumstance.

- Even though the confidentiality assurance has been given to the participants, some information could not be supplied because of its criticality to the organisation competitive advantage.

5.3 RESEARCH RECOMMENDATIONS

After a consideration of information collected by the review of published materials on the topic of this research, and the data collected through interviews with the participants, the researcher has observed that business processes are considered as one of the strategic assets of organisations. If they are effectively developed by taking account of different aspects of the

business and integrated into the organisation's operations, they ensure flexibility, harmony, consistency, results predictability, high cost and waists avoidance. In general, they contribute positively to the good flow of information and activities and add value to the organisation's value chain. This leads to the improvement of customers' satisfaction and the performance of the business (financial and better recognition).

This research found that the success in the development and management of business processes is achieved not just with sophisticated tools and technologies alone, but by understanding different elements in the environment of the business processes themselves, including:

- Business vision, mission, and strategies.
- The understanding of the users within the organisation. This includes the users and their level of training, the executive management and their continuous support to the development process.
- The understanding of the needs of the business processes and the stakeholders. Including the business ability to afford the cost of implementing the business processes and maintain them in the future. Stakeholders such as customers are the reason why business exists. Therefore, each process must be developed to accommodate the customers (internal and external to the company).
- From the needs of the business and stakeholders, a suitable management framework and suitable technological tools and techniques can then be selected and adapted to accommodate the needs. Taking in account financial position of the organisation, the skills level and commitment of the employees.
- The organisation has to develop a measurable KPAs (or KPIs) that can be used to measure the success of the business processes. To ensure success, the organisation should also think and development the strategies for dealing with challenges (such as people resistance) and strategies to manage quality requirements issues.

In general, there is a need of taking account of business processes surrounding environment to avoid any pitfall related to the

implementation of business process that does not address the situation of the business and become a liability instead of an asset.

As such, the selection of business process management tools is a company's choice, depending mainly on its strategy, time requirement, budget, skills, and how well the business goals are sustained and aligned with the business processes and other related resources within the organisation.

With reference to this research question, the researcher has established through this research that:

- Business processes and their management are key drivers to the success of business organisation in the delivery of products, services, and ensuring business adaptability to the environment conditions, customers' requirements, innovation, and quality in the delivery of products and services to satisfy the needs of the stakeholders and achievement of its objectives.

- There are various tools and frameworks that are used in the management of business processes. As discovered in this research (appendix C), ITIL and COBIT are the most referenced frameworks in the management and development of business. With precision, five out of six companies that participated to this research reference to these frameworks for different reasons, which is about 83% of the participants. Apart from this fact, the selection of a particular framework and tool is a choice of the organisation based on how well the framework matches its business needs, skills level of its employees, and financial position. At certain point participants refer to the traditional SDLC and PMBOK methodologies during the development of business processes.

- There are certain specific characteristics that each business process development project needs to care about. This include elements such as documentation of the steps of your business processes and related information collected along the development stages, ensuring flexibility

in the processes as the environment in which the business organisation is changed constantly, explain the purpose of the process to the users, arrange workshops and training for the people (users of the processes) to understand the advantages of following the processes, ensure that you have support of executive management, research and apply the best practices, have access right to the infrastructure, and apply effective change management strategies.

- There are different challenges that are encountered during the development of business processes in general, from the first day of the process enactment to the continual improvement activities. The challenges range from human aspect such as resistance to change, their commitment, identification of correct information from the current system and activities that can lead to the development of new processes as people may not have full understanding of the system, to technological complexity and strategies for implementing new processes (phased or big bang approach). These challenges must be addressed using strategies such as proper communication, engagement and training of the people, to ensure that challenges are totally removed or their impacts are minimised.

- Quality is another recommendation that any business need to include in its practices from the initiation to the maintenance. The same applies in the business processes development as well. To this, it is recommended that organisation designs strategies for ensuring quality in the business processes development from the beginning of project. Quality can be achieved by designing own quality tool or adopting commercially off-the-shelf products.

- For the organisation and its executives, before selecting the frameworks for the management of business processes, it is essential to understand the strategic objectives of the organisation, the culture of the organisation and its employees in terms of change and adaptation, and also the contextual application of the frameworks. This can help to

assess if the framework can support the goals of the organisation or not. If not, the organisation can look for the alternatives.

- The implementation of the framework to manage business processes should be considered as a project up to the time when business processes are implemented, and then should become a continual process that evaluates the performance and outcome of processes with the intention to improve them in case of any outcome that is not satisfying the purpose of the processes.

- Finally, process management is a continual cycle, as long the organisation is still providing its products and services in the dynamic environment, processes need to be managed and continuously tested and improved to ensure that there are no disruptions or bottlenecks in the productions and delivery of services to customers is maintained at high standard and ensure satisfaction from the start to the end of each process.

5.4 THE VALUE OF THIS RESEARCH FINDINGS

Business processes exist and have an impact on the operations of the organisation as long as the later continue to exist. As such, they need to be developed according to best standards and practices available in the market. Of great importance is that processes need to be developed once and well to avoid any disruption of services.

This research project was valuable in the sense that:

- It has collected and put forward established practices from various industries which can serve as the basis on which any business process project that organisations embark on can apply to ensure that they (organisations) develop processes once and correct as pitfalls and tested practices have been defined in this research to create awareness before they occur.

- By speaking to the industry experts concerning the usage of ITIL and COBIT, or other frameworks and their roles in the development of business processes, the recommendation here is just a question of selecting what applies to the needs of the organisation as each framework and its roles are defined and different.

- The researcher has analysed the participants' efforts in the application of frameworks in managing business processes, which should be directed to the creation of harmony and alignment of business processes to technological infrastructure and overall organisational environment to ensure flexibility, and to minimise the cost, and production. As a result of effective management of business processes, the organisation improves its productivity and competitiveness and ensures that customers get value for what they are paying for.

Following the consideration of the importance of business processes and their management using ITIL and COBIT frameworks as presented in this research, it should not be generalised that all organisations operating in the networked economy should implement their business processes using ITIL and COBIT frameworks. This is because organisations are different in their objectives, sizes, structure, culture, industry they operate, products offered, employees skills level, and many other elements. It is their choice to select and adapt suitable tools to assist in the management of business processes and the measurement used to evaluate their quality and success.

One cannot therefore assume that the findings of this research can be generalised to all situations where any framework can be used in the management of business processes as different frameworks can be applied for different industries and different objectives.

5.5 SUGGESTIONS FOR FUTURE RESEARCH

It is the researcher's belief that this research is not a final study on the issues related to business processes and their management with the usage of processes development and management frameworks and related best practices.

This study has laid a foundation for future research by developing two models that that can be references during the development and management of business process. One can be used to understand the environment of business processes and the other includes best practices from ITIL and COBIT into the phases of business processes development and management cycle. However, the topic of business processes and their management needs further investigation as this research could not claim that all aspects have been exhausted. Further research topics should be directed toward the areas such as:

- Process ownership and security for the telecommuting environment. This area could include aspects such as security of business processes in the mobile computing.
- Development of business processes for specific industry. This research will have to look at aspects such as specific characteristics in that industry and technology for implementing business processes in that industry or comparison of industries such as finance and communication.
- Analysis on cost and return on investment for successful and unsuccessful business processes.

5.6 SUMMARY

Business organisations in today's highly competitive networked economy are competing based on different strategies. Some of them are financial, technological, innovation, quality of products and services, others organisations rely on the business processes that speed up the development and delivery of products and services to the customers.

The empirical study revealed that business processes are counted among the key strategic assets of the organisation. If the challenges affecting them are not addressed, the expected value from business processes cannot be experienced. Therefore, better address the development and management of business processes with best practice frameworks as identified in this research.

The most important concern with business processes throughout all the phases should not only be emphasised on the usage of the ITIL, COBIT or other frameworks, but need also to have a systematic view of the business and stakeholders needs, requirements and environment. The emphasis should also be on the identification of the most needed activities that need to be included in different phases of business processes. Ensure also that different challenges that can affect the development and management of business processes can be removed or managed to minimise their impact along the processes development and management activities.

Through effective selection of processes and frameworks that best support the organisation objectives, the management of business processes should be made effective from the analysis, design, implementation, and throughout the continual improvement phase. All these strategies and best practices were identified to ensure that the organisation becomes flexible, effective, and well equipped to satisfy customers' requirements and can be adapted because of the dynamic environment in which they are delivering products and service changes continuously.

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APPENDICES

APPENDIX A: SUMMARY OF INTERVIEW QUESTIONS

QUESTION: 1.

Company's performance is a combination of different elements that interact together for a specific purpose or outcome, including its business processes. What do you understand by business process? And why should companies need to have one?

QUESTION: 2.

Which tool (s) or framework(s) do you use to develop (from design to implementation) business process? What is the importance of each selected tool in the process?

Note: You can also explain if you are using a combination of tools as well.

QUESTION: 3.

During the development of business processes, what are the specific characteristics of a business process that you have to take care of to ensure that the processes are successfully developed?

QUESTION: 4.

What process or steps to you follow to ensure that business processes are correctly developed by taking account of all possible performance aspects?

QUESTION: 5.

What are the challenges do you often encounter when developing businesses and how do you overcome or manage them?

QUESTION: 6.

How do you ensure quality during the development of business process?

QUESTION: 7.

What are your activities or tasks as process developer after the development of business process for a particular customer? Do you manage the process for customer or the customer takes control of his / her process during the operations? Do you come back at certain stage to check if processes are still performing accordingly or not?

QUESTION: 8.

Do you feel that the tool (s) or framework (s) selected for the development of business processes give you expected degree of satisfaction for all processes developed or for some processes only? Please specify your satisfaction or dissatisfaction.

QUESTION: 9.

Do you use the same tool (s) or framework (s) when developing business processes for companies in specific industries or you use them for the companies in any industry they are? If there is selection or separation according to the industry, why are you doing so?

QUESTION: 10.

Do you have any other specific element (s) of importance to consider when you are developing business processes that a novice process developer can be aware of to ensure success in business processes development?

APPENDIX B: BIBLIOGRAPHICAL DATA FORM AND PARTICIPANTS PROFILE

Bibliographical details (Very confidential and NOT OBLIGED)

Names	
Surname	
Company Name	
Industry	
Your Department	
Position in the organisation	
Duties / Tasks	
Years of experience	

Participants profile

ORGANISATION	Experience (years)	Position
Candid A	32	Transition manager
Candid B	14	IT manager
Candid C	6	Senior consultant
Candid D	11+	Principal consultant
Candid E	10	ICT manager
Candid F	8+	Two senior consultants

APPENDIX C: DATA ANALYSIS (Grounded theory - inductive coding)

Question 1:
Company's performance is a combination of different elements that interact together for a specific purpose or outcome, including its business processes. What do you understand by business process? And why should companies need to have one?

Participants	Code	Transcripts
Candid A	- Standard - Consistent - Vision and mission	- No good management of people and customers, it is difficult to lead people because of lack of standard, so that you can gather for diverse customers. - We sell services, we have to be consistent. - To deliver quality services, to understand one another as it include vision and mission
Candid B	- Inputs, interrelated activities, and outputs. - Value chain - Certification - Documentation	- Definition of BP is that is has inputs, activities, and outputs (in activities area there are interrelated activities that take place to deliver outputs). - BP are in our value chain, we use our operational value chain, and support value chain with interrelated activities (as in case in case of customers buying tickets to the destination). - As ISO 9001:2000 certified company, you work in process approach. - In ISO process they are five components with processes in each (Need to have quality management system, what is the management responsibility, how do you manage your resources, what is your product or service realization, how do we measure. Monitor, and analyse what we have done. - Document your processes and procedures.
Candid C	- Series of action with outcome - Create harmony - Predict outcome - Proactive - Avoid waist	- High level series of actions that lead to outcome. - Input, process, and outcome (eggs and fire, breakfast) - If you don't have processes, everyone will do their own things, difficult to measure. - Processes help to predict outcome, which is a good thing in business to react in advance and when needed. - To avoid waist by removing unnecessary steps.

<table>
<tr><td></td><td>- Products and services</td><td>- In a company there are many processes, but take care of what comes first and to the last. That is management.
- As companies produce services and products, they need process and management.</td></tr>
<tr><td>Candid D</td><td>- Key driver
- Vision and mission
- Enable inputs and outputs.</td><td>- Processes are key driver to any business.
- For the business to be successful you have to define the process according to vision and mission of the business so that it drives what you need to do.
- It is an enabler for the people to have repeatable process to have identifiable inputs and outputs to support the business achieving its goals.</td></tr>
<tr><td>Candid E</td><td>- Task that adds value to value chain
- Need improvement</td><td>- Business process is a discrete task that adds value to the value chain of the business. In our context, a business process may be “Mine designing” and another could be “They payment process for Mining Contractors”.
- Yes, there is great need that these be improved.</td></tr>
<tr><td>Candid F</td><td>- Guideline for the business
- Vision
- Best practice</td><td>- A business process is a guideline for the business in whichever area or department that is linked to the overall vision of the company. It ensures that there is a level of best practice applied in helping the company to grow by increasing its level of maturity.
- Currently there are 5 levels of process maturity as proposed by some. The following it mentioned on this website, as a ITIL (Information Technology Infrastructure Library) PMF (Process Maturity Framework).
The ITIL PMF has 5 levels:
<table><tr><th>Level</th><th>PMF</th><th>Focus</th><th>Comments</th></tr><tr><td>1</td><td>Initial</td><td>Technology</td><td>Technology excellence/experts</td></tr><tr><td>2</td><td>Repeatable</td><td>Product/Service</td><td>Operational processes (e.g., Service Support)</td></tr><tr><td>3</td><td>Defined</td><td>Customer Focus</td><td>Proper service level management</td></tr><tr><td>4</td><td>Managed</td><td>Business Focus</td><td>Business and IT aligned</td></tr><tr><td>5</td><td>Optimized</td><td>Value Chain</td><td>Seamless integration of IT into the business and strategy making</td></tr></table>Table 1. The ITIL PMF
- A company needs to have business processes because not everyone is hired at the same level to know what needs to be done in their individual departments. Some are knowledgeable but are not sure what the company would require overall. This guidance, or an approved process, would help towards this.</td></tr>
</table>

Question 2: Which tool (s) or framework(s) do you use to develop (from design to implementation) business process? What is the importance of each selected tool in the process?		
Participants	Code	Transcripts
Candid A	- ITIL adapted - BMC remedy - SAP	- ITIL has been adopted as methodology for BP, just few components have been adapted, and BMC remedy suite of products (for operations services) - We combine also SAP
Candid B	- ISO 9001:2000 - COBIT what - ITIL how	- For the business we use ISO 9001:2000 standards, for IT processes we use COBIT and ITIL (in IT sphere) - COBIT teaches us what we must be doing in its four domains (Planning, organisation, acquisition and implementation, and monitoring). Processes are written according the procedures in each domain. - ITIL show us how at the implementation side.
Candid C	- COBIT and ITIL - Facilitate reuse - Alignment - Outcome - Customer needs	- You use tools to make management easy (COBIT for IT management and ITIL for services) to facilitate reuse (as fire in breakfast can be used for super). - Tools for align business strategies, objectives to services delivery to processes. - ITIL for services alignment - COBIT for governance - Main drivers are what you want to achieve.
Candid D	- COBIT and ITIL complement - IDF0 - Depends on industry.	- ITIL is used as maturity framework, which is aligned to CMMI and COBIT. Based on interview with clients to see where they are. - COBIT is about governance compliance and Audit, it tells you what you need to do. It says you need to have security in place. You need to have planning in place. - ITIL how you should do it, will tell how to put security in place. It tells you how to plan. - We use IDF0, but its depends on clients, some prefer flow diagrams, but methodology is IDF0. - If financial industry, they prefer more defined or formalized methodology. With inputs,

		outputs, and governance. In retail, they will prefer more relaxed. But is depends on industry.
Candid E	- SDLC	- Structured Systems Development Life Cycle - No particular care was taken but some stages of the generic SDLC were adopted and followed informally.
Candid F	- ITIL - COBIT - PRM-IT and IBM Services Model	- I would use the same answer I used last time. The following are some of the more popular tools to use when defining IT processes: ITIL, CoBIT, IBM's PRM-IT and IBM's Services Model. - The above mentioned frameworks are more IT framework processes. I would not be very familiar with business processes. Perhaps you should ask a Business Process specialist on these.

Question 3:
During the development of business processes, what are the specific characteristics of a business process that you have to take care of to ensure that the processes are successfully developed?

Participants	Code	Transcripts
Candid A	- Document processes - Flexibility - Explain people and soft skills and workshop - Management support	- Continuously document your processes - Flexibility - People aspects, as people tend to resist. Solution is to communicate and explain why you want to change. Using own skills. - Get buy in from managers or top management support.
Candid B	- Document processes - Know business and activities.	- You need to write down the activities for the process. Specify the relationships of the activities. then inputs and outputs, then get feedback if the activities are in compliance. - You need to understand the business and the activities.

Candid C	- Customer needs	- For the process to be successful you have to respond to customer needs and wants. Because you can develop a good business process, but if it does not respond to customer needs, then it is useless (example of Vodacom requirement escalation case)
Candid D	- Best practices - Inputs, outputs, and controls.	- Best practices mapping, not to be compromised. - Key inputs, outputs, and controls.
Candid E	- Standards - Infrastructure - People	- Standards; infrastructure; people - To interlink the people who would participate in testing, communication standards had to be followed so did the right type of infrastructure. Procedures for use were also developed and tested. Room for Continuous improvement was left.
Candid F	- Common goal - Clear understanding	I'm not sure if I will answer your question but in general, I would ensure that the following characteristics of a business process are successfully developed: 1. That the process can be formally interpreted into an characteristic that is practical in achieving common goals and thus successes. 2. That the process is clear and understood otherwise implementation will not be successful. 3. That there is seriousness around the requirement of the process otherwise it would not be a necessity. There are other priorities that the business could attend to. Adding to the this; that the process is addressing a need.

Question 4:
What process or steps to you follow to ensure that business processes are correctly developed by taking account of all possible performance aspects?

Participants	Code	Transcripts
Candid A	- ITIL related - PMBOK	- Own process called Engagement Methodology it goes to ITIL process, starting with define scope, design, prototypes of what to expect. The same as ITIL process: Design, develop,

		implement, operational, maintenance. - We use project management methodology: have communication plan, schedule, budget...
Candid B	- PMBOK	- Methodology that is used in project management is applied (Business requirements, what is the scope and parameters, what constraints and benefits, heve looked at alternatives, engagements, prototype, you have to benchmark, have looked at the best practices. Generally we use PMBOK.
Candid C	- Engage stakeholders	- Considered as company's secret, not answered correctly. - Recommended the do and don't of process development on the Internet. - But quickly you cannot have to develop processes without engaging stakeholders.
Candid D	- Depends on level of maturity	- Depends on the needs of customers, then we get what customer needs and level of maturity.
Candid E	- SDLC Process	- Need analysis, Proof of concept Testing, Communications Service Design, Service Transition (parallel runs), Service Operation (Demand Management of the service; Capacity Management; Problem / Event Management), Ongoing Optimization of the service.
Candid F	- SDLC Model	The same as with the answer in 2008. 1. Process identification, o Through workshops and meeting with the relevant stakeholders / management. It's important to have senior management support and understanding. 2. Process modeling (current as-is state) and analysis, o report the findings and improvements that could be made, o get agreement on the implementation (this could be another contract), 3. Process implementation, 4. Process execution and 5. Process monitoring, controlling and reporting

Question 5: What are the challenges do you often encounter when developing businesses and how do you overcome or manage them?		
Participants	Code	Transcripts
Candid A	- Misalignment - Access to infrastructure	- Misalignment, not delivering what customer wants and scope creep. - Maturity of organisation, access to infrastructure given different people or authority levels.
Candid B	- Engaging people: Workshop the people - Resistance: communicate, soft skills.	- The main challenges are engaging the human resources. Keeping the involved and understanding what is a process, what are the expected outcomes, what activities are involved, time, cost, quality, and viability. - Address resistance, use your leadership skills to engage the people by showing the benefits of using new type of processes for them to be productive. Show them advantages. - Key element is communicate, use values of fairness, integrity, teamwork.
Candid C	- Resistance: communicate - Lack of understanding	- Resistance, people often react. To counter this, communicate and get buy in. - People don't understand the current process or don't have information that will put you in situation not having inputs. Then you know that processes are as good as the information you get. Otherwise, you get wrong information to improve the wrong things.
Candid D	- Resistance: engage people - Change management	- Resistance to change by people. You need to involve executive managers to champion the process. And use change management.
Candid E	- Resistance: User and technical training - Benchmarks and workshops - Phased deployment	- Low User perception: user training - Expertise: technical training - Reference Companies: held workshops since there were not many other Companies with the same - Deployment Capital: phased deployment
Candid F	- People feel obsolete	- People feeling that they jobs have now become obsolete seeing that their 'head

	as knowledge being documented - Support from management - Not understanding process	knowledge/experience' is now being documented for others to use: Providing an honest explanation to employees as to the challenges that management have around processes will help to overcome. - The department being too busy to be in a process discussion. They would rather be fixing problem: Management supporting the initiative and supporting the time needed to develop this process. Thus assisting in managing other priorities. - No support or urgency from senior management. That the process is not fully understood: Assist with a top-down message of why the process is required.

Question 6: How do you ensure quality during the development of business process?		
Participants	Code	Transcripts
Candid A	- SHEQ to Audit - Update documents - ITIL certification	- Currently we are using our internal Safety, Health, and Environment Quality (SHEQ) to audit processes for correctness and if Standards Operating Procedures (SOP) has been followed. - If changes are made, you have to update the document as we are ITIL certified.
Candid B	- Quality management system - Be proactive - Continuous audit	- We use quality management system, one of the key components is Do measure, monitor your work, do your analysis, report on it, and do you continuously improve your work? - Be proactive to prevent problem from reoccurring. - There is an audit after each six months of processes against the procedures for compliance.
Candid C	- Meeting needs	- Remember that quality is perceived, what you see as quality might be different to someone else. - For me quality is responding to specific needs that I have as...customer - For example, if I need ten cups, and I produce ten cups, I have meet quality.
Candid D	- KPAs measures	- Ensure that KPAs are measures of success. Example of KPAs depend on the process. If it is an incident management process, it will be number of successfully resolved incidents or

		percentage of reduced incidents.
Candid E	- KPAs measures	- Have many quality checkpoints This helps in fixing smaller tasks and avoids absolute loss
Candid F	- Quality check - KPIs measures - Quality policies - Training people	- Basically a person would have to be hired to ensure that there is a quality-check on the; o data entered in the tool o improvements in training people on how to enter data in the tool o ensuring that the data entered is of value to the business and can be reported back to the business - Ensuring that there are measurements in place e.g. key performance indicators (KPIs) that would assist - Creating policies in the tool/s that will ensure that quality data is entered - Through the KPIs ensure that the relevant reports are created for the difference management levels as well.

Question 7:
What are your activities or tasks as process developer after the development of business process for a particular customer? Do you manage the process for customer or the customer takes control of his / her process during the operations? Do you come back at certain stage to check if processes are still performing accordingly or not?

Participants	Code	Transcripts
Candid A	- Depending on the contract - Financial implications - Manage after development is the best option	- We do both, but it is depending on the contract. - We do both because we develop the processes and handover the manual to them. - If the contract says we our limit is based only on the development of processes, we will limit ourselves there. If there is a requirement to manage the processes, we will do so given that it will incur extra cost for the management. - The best option is to manage the processes after the development because you know what, where, and at what time something goes wrong and how to fix the problem.
Candid B	- Engage people	- We are not working like that.

		- It is the people who are doing the work that write the process.
Candid C	- Training people - measure	- Training the users of the process, all the stakeholders around the process need to be trained. - You take them for example three months, then they will be able to use them given the support you them. - Another thing is if you start getting a different output after measurement, then you will know something is wrong.
Candid D	- Training users	- Training of people or users.
Candid E	- We develop and manage - For better improvement - But ownership is to customers	- We develop the processes and manage them for our customers since there will be room for us to improve on that process be it metrics wise or relevant KPI wise. So whilst the customer takes part of the ownership, the greater chunk of ownership remains ours.
Candid F	- Depends on the contract	- Continuous monitoring and implementation of the process. When implementing the process doesn't guarantee that it's immediately successful. There could be other aspects that could not have been implemented at the time. - It depends on the contract signed with the customer. At times a customer will request assistance for this and at times they will not need assistance. - If the customer would require this, yes. Otherwise overall, they should always be a check of the implementation of the process and for the customer to assess where the currently are in the process. They should also check what has been implemented and what has not been implemented.

Question 8:
Do you feel that the tool (s) or framework (s) selected for the development of business processes give you expected degree of satisfaction for all processes developed or for some processes only? Please specify your satisfaction or dissatisfaction. And do you use the same framework (s) for the management of processes?

Participants	Code	Transcripts
Candid A	- Regular testing - Call customers - ITIL Continuous improvement - Soft skills	- Processes are regularly tested to ensure that they are applicable. Changes based on Service Level Agreement (SLA) - Make calls to customers and survey conducted through private company to ensure customer satisfaction. - Continue with ITIL on continuous improvement. - Deal with people, have soft skills.
Candid B	- Adapt COBIT to needs	- It is not we are not satisfied. - For example, COBIT is made up of 34 processes, to teach people all these will take time. We that what is applicable to our company and we call it COBIT light. We adapt the tool according to our needs.
Candid C	- Depend on needs	- Definition of the problem correctly will lead to pick the correct tool.
Candid D	- Yes - Adapt to needs	- Yes, it usually works, yes we do get benefits, but it depends on clients. - Sometimes we do adapt according to the situation.
Candid E	- Currently we are using a traditional tool - Not getting the best out of it	- Currently we are using a traditional tool for process development but our survey and studies have shown that we are not getting the best out of it such that we are considering moving to new frameworks of management and development. The traditional ones in use here are lagging behind requirements being called for by business processes in our organization.
Candid F	- Feel a degree of satisfaction - Trust	- Yes I would feel a degree of satisfaction. One cannot implement something one is not fully convicted of. The success rate would be lessened if there is lesser, or no, conviction. - Furthermore the business processes chosen are better entrusted, or are better satisfying, if the source is trusted. If the source or the developer of the process is trusted there is higher satisfaction and the process developer would base their processes on the best sources available in the industry. That is that they would use processes, or provide guidance's, that have been proven or tested.

Question 9:
Do you use the same tool (s) or framework (s) when developing business processes for companies in specific industries (different departments) or you use them for the companies in any industry they are? If there is selection or separation according to the industry, why are you doing so?

Participants	Code	Transcripts
Candid A	- Customer needs	- ITIL is the only base methodology. We look at the needs of the customer.
Candid B	- SLA with departments - COBIT templates	- We enter in SLA with departments, we use COBIT as framework for SLA such as: o How many jobs where logged for the year. o What is the server availability? o Documents management systems. - Then we say for the month we have delivered 95% of server up time. For this month this department we responded to 90% of your calls. These are the calls and time spent. Success trends and analysis for reporting. Actually using a template of all this on COBIT.
Candid C	- Requirements - Different needs	- You cannot use the same tools for everyone, it depends on their requirements. - Tool is as good as the person who is going to use them. - Businesses have different needs, they are structured differently, they have different people that execute different tasks with different level of training, cost, how much they can afford, how well the people are going to execute the tasks. All these do play into the tool you are going to use.
Candid D	- Adapt for comfort	- The key is to consider people who are going to use the process, give them what they can feel comfortable with. - Yes, we can adapt the IDF0 or simplified it or support is with flow diagram with Root Cause Analysis (RCA) diagram.
Candid E	- Same tools - To conform to policies	- We use the same tools without segregation. Ours is a group of companies with different Divisions which have to conform to given group policies.
Candid F	- same tool can	- The same tool or framework can be used across industries. The framework would be specific

	be used across industries	to advice of such. For example the ITIL (Information Technology Infrastructure Library) framework is a cross-industry guideline. - There is no selection or separation according to the industry.

Question 10: Do you have any other specific element (s) of importance to consider when you are developing business processes that a novice process developer can be aware of to ensure success in business processes development?		
Participants	Code	Transcripts
Candid A	- Buy in from people - Same language - Measure (People, process, technology)	- Buy in from the people who will use the process so that they can talk the same language, otherwise it will be not useful. - Ensure that people understand the shortcoming if processes are not followed. - Ensure that you have measurement in place (people, process, technology). o People include clients and service provider o Technology include remedy and ITIL o Process is fixed and can be any process (must define service, SOP, instruction document).
Candid B	- Understand business - Workshop people	- Biggest problem we find with IT people is that they are technophobic, they do not understand business. They want to fix machine but they do not know why they are fixing the machine and what is the business outcome and value of their work. They do not have business acumen. - We need to create awareness for the people to understand the company's vision, mission, and values, the strategies, objectives. Workshop company's plan with IT people in that way we inculcate business sense to them.
Candid C	- Understand customer needs	- Gone are the days we know what the customer want, - Understand what customer want needs then structure your solution to respond to customer.

		- If you design a process that cannot support what customer want, then you have missed all the point. - Because once you understand customer needs and wants, you can then know which process to support, which systems to support that, and what kind of people and caliber to support that.
Candid D	- People engagement - Best practices	- People, buy in from people, if they don't buy in, they will follow the processes. - Mapping processes to best practices.
Candid E	- user satisfaction - Financial perspective	- Intended level of user satisfaction should always be checked on whilst developing. Also the financial perspective of the IT Service provider
Candid F	- Common goal - Clear understood	- The specific elements of importance are mentioned under Question 3 and 4 above. If these are followed they can make developing a business process successful.