Impact Assessment of the effectiveness of the Public Internet Terminals Infrastructure Model: SAPO

A Research Report

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by

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DECLARATION OF OWN WORK

I, Portia Matsena, declare that this dissertation submitted by me in partial fulfilment of the degree Masters in Business Administration at the Graduate School of Business Leadership, University of South Africa, is my own work and has not been previously submitted, by me or any individual to obtain a qualification at another university. Furthermore I declare that all reference sources cited have been accurately reported.

Signature: _____
Portia Matsena 07 May 2012

TABLE OF CONTENTS

LIST OF ABBREVIATIONS

BU – Business Units

CEO – Chief Executive Officer

CIT – Corporate IT (A division within SAPO)

CV – Curriculum Vitae

DFID – Department for International Development

DoC – Department of Communications

ICT – Information and Communication Technology

IT - Information Technology

SAPO – South African Post Office

SOE - State Owned Entities

SSA – Social State Administration

UNDP - United Nations Development Programme

PIT – Public Internet Terminal

R & D – Research and Development

EFQM - European Foundation for Quality Management

ABSTRACT

The study aims to assess if access to government services have improved since the massive roll out of the Public Internet Terminals and to evaluate the impact the Public Internet Terminals have on enhancing the livelihood of the communities with the South African Post Office being the case study.

The Public Internet Terminal (PIT) is an initiative aimed to bring electronic communication and a bright future to all South African citizens. It was launched in 1998 as a joint venture between the Department of Communications (DoC) and the South African Post Office (SAPO).

The research seeks to investigate the problem of the lack of utilisation of the PITs and the inefficiencies encountered which is traced to the emergent strategy and possible operational inefficiencies this is likely to have that may impede on the effectiveness of government. This study will not propose the ultimate solutions to the challenges and problems encountered by SAPO as a company. Its main aim is to establish the root causes and symptoms of the problems, which will ultimately guide the steps that will be needed to be undertaken for future implementation of such projects.

This research should be able to generate a lot of interest for government and state owned entities.

In Chapter 1, the study demonstrates the background of the research problem. The chapter sets out the situation in the form of the background to the objective of the Public Internet Terminals and the problems faced by the roll out of this initiative. It also depicts the lack of usage of this technology and the management concern which it is argued, if it continues unabated could lead to serious problems in the business of the South African Post Office and the Department of Communication.

The problem has been meticulously reviewed resulting in the formulation of the problem statement followed by the research question. Also, what has been articulated in this chapter is the research objectives which guide the exploratory approach.

Chapter 2 provides an analysis of the research problem using theoretical perspectives and management models that are relevant to the practical problem of the technology and innovation. The research hypothesis is that the "**massive roll out of Public Internet Terminals is currently not enhancing the lives of the communities in the rural areas"**, which is illustrated by the lack of usage of the PIT infrastructure rolled out.

The formulation of the research problem has been followed by the literature review which is undertaken in Chapter 3. The literature review has sought to establish, amongst others, whether there is a causal relationship between innovation, technology, operational efficiency, and poverty alleviation. The relationships in

these concepts have been blended, leading to some conclusions that have enhanced the research objectives.

In Chapter 4 the research process followed is outlined. It illustrates the research methodology that has been followed in diagnosing the problem and unearthing of the underlying trends and patterns in the real situation. The underlying trends and patterns have been determined utilising data that has been collected through interviews with all key stakeholders identified.

Chapter 5 provides the results of the research analyses relating to the research objectives to test if the research results show that the research objectives have been met, and also to assess whether the research questions have been answered.

The last chapter, Chapter 6 captures the conclusions that illustrate the relationships between technology, innovation and poverty alleviation. The conclusions are followed by recommendations that would help with future implementation of projects of a similar nature.

LIST OF FIGURES

CHAPTER 1: INTRODUCTION AND PROBLEM IN CONTEXT

1.1 INTRODUCTION

This study postulates that the massive roll out of the Public Internet terminals (PIT's) has enhanced the lives of the poor by providing easy access to government services. It further assumes that the PITs are able to facilitate access of eService's to all the citizens in particular where electronic services are not freely available such as in the rural and remote under serviced areas of South Africa.

In addition, it explores the envisaged value added initiatives stipulated in the memorandum of understanding entered in between the Department of Communication (DOC) and the South African Post Office (SAPO).

1.2 PROBLEM IN CONTEXT

The Public Internet Terminal (PIT) is the Department of Communication initiative that aims to bring **electronic communication** to all South African citizens. It was launched in 1998 as a joint venture between the Department of Communications (DoC) and the South African Post Office (SAPO).

The South African Post Office dedicated R28 Million for the construction of the Public Internet Terminals in **partnership** with the Department of Communication. Currently there are eight hundred and twenty five (825) PIT's terminals in South Africa spread across all nine Provinces, with the perception that the investment is currently not yielding the results initially envisaged. Anecdotal reporting indicates that the South

African Post Office has adequately addressed issues of access and coordinated information, but is still struggling with integrated Information communication Technology (ICT). The Government Communication and Information System, when it presented its **strategic plan** for the medium term 2011-2014 to the Parliamentary Portfolio Committee on communications, reported that new platforms had to be investigated to reach larger sections of the population and also emphasised the importance of harnessing the **public private sector partnerships** for better delivery. The committee's concerns focused on, among other things, whether the Public Internet Terminals rolled out were effective and also being fully utilised by the public.

The PITs have reached the end of their life cycle a few years ago. On a daily basis we have PITs breaking down either due to failing hardware or software. Parts are difficult to come by because it needs to be imported from Brazil. The software is out-dated and not compatible with latest technology. Lack of ownership is a reality because management at the retail outlets which accommodates these PITs do not see any benefit from it.

The aim of the PIT's originally set out by the Department of Communication are:

- Create a **communication interface** between government and public access government information/services via the internet
- Provide universal and affordable access to digital communication infrastructure
- Host government services – that is, free access to government information and sites

- Stimulate and support Small Business by facilitating an electronic environment
- Provide e-mail addresses and e-mail facilities to all citizens of the Republic of South Africa
- Access to government job opportunities/applications
- CV and Resume creation

Competition in the current global economy is very complex, challenging, and is filled with competitive opportunities and threats. The current landscape and dynamics of the telecommunication industry is very competitive and brings about **radical changes**. These technological changes seem to be reshaping the industry in that it allows an increased degree of competition.

When an environment is very competitive it has a tendency to influence the **choice of strategy** that is required to be adopted by organisations, and this also increases the risk of decision errors when it comes to the planning for further growth. The nature of the industry has also indicated that the differentiation of products and services through **innovation** is an important weapon as external factors such as government shows a tendency to influence the strategic direction of the State owned Entities (SOE's). With this in mind, SOEs need to be very careful as to which innovative projects resources are agreed upon and to be invested in. The evolution of the industry and its higher than normal technology presence also has the tendency to produce products that are not necessarily initially required by customers, which later become quite vital for the public and can therefore impact the

organisation's strategic planning activities that now evolve into a management dilemma of a technology push or market pull product development process. Should the government cater for the needs of the market, or produce or partner with the industry through their state owned entities. In these situations strategic leadership and innovation strategy are crucial for achieving and maintaining strategic competitiveness in the 21st century. Strategic leaders have been repeatedly recognized for their critical role in recognizing opportunities and making decisions that affect innovation processes (Drucker, 1985; Finkelstein & Hambrick, 1996; Quinn, 1985).

In South Africa government services are very difficult to access for ordinary citizens and is even worse for those living in rural communities. ICTs are often seen as being the critical link to bridge this gap. The Public Internet Terminals (PIT's) serve as an effective means of bringing information, in a two-way process, to the communities in a manner that ensures government-to-citizen interaction. In this sense, the Public Internet Terminals (PIT's) can be seen as a crucial information and communication resource for the whole community, supporting the goal of universal access to the emerging Information Society.

Furthermore, some of the major challenges seen to be faced by South Africans with regards to the degrees of access to the use of ICT are:

- **Location inequalities: larger versus smaller town mentality**. Smaller towns have less access to basic residential services and business-related services, and have fewer qualified public sector service staff

- **Positive attitudes and perceptions** regarding ICTs are more prevalent in middle and upper class culture, particularly in the culture of the intellectually gifted
- Future requirements and **changing** needs of society; the **change** of economic focus in the information era; and the speed of **change** of technology
- **Poverty** levels differ within the rural areas. People struggling to survive have little benefit of **ICTs** due to travel time and costs

It is within this context that the mandate was received to investigate the problem described above.

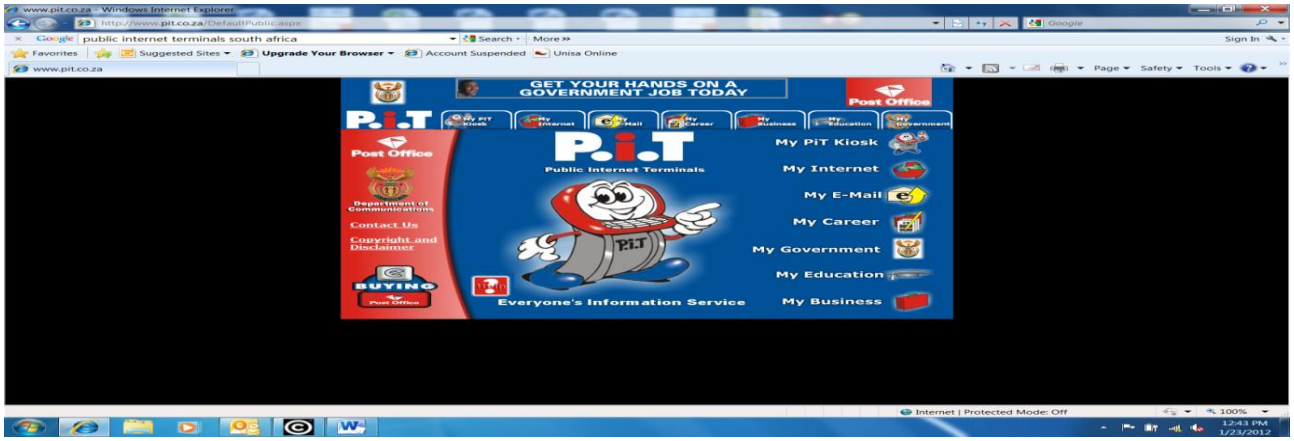

Table 1: PIT

1.3 PROBLEM REVIEW

From the mindmap of the issues raised in the problem in context, and the background information, a number of emerging themes have been identified as follows:

- Strategy and Leadership
- Innovation and Change

- Stakeholder and Relations management
- Information and Communication Technology
- Behavioural Change
- Poverty Reduction

The introduction of the PITs is a classic example of government initiatives in reaching out to the public through Information and Communication Technology. These radical innovations occur as part of the process of technological evolution, but can the government state owned entities earmarked for technological organisations really keep up with the rate of technological change? Sometimes technological innovations evolve into a technology which has a severe impact on the incumbents existing products and services (such as mail business) as now there is room for the development and manufacture of better and cheaper products that didn't exist before. This innovation thus creates a new market or reshapes an established market, and it comes in the form of a new product or service or a new business model.

In ICT, one of the most difficult challenges facing government and SOEs is staying relevant and more specifically, being able to respond to disruptive innovations. This is especially true in the ICT industry where multiple product generations and rapid technological evolution continually test the ability of the incumbent to stay ahead of potential entrants. The introduction of the PITs has allowed a cheaper and more efficient means of communication which implies that current providers need to be very wary of the threat that this type of technology

brings to their existing revenues and profit. If one further considers this impact, then the public could now apply for government services at their nearest post offices and create an interaction mode with government through email, instead of driving to the government centres.

The implication of this for business strategy and planning is that competitive advantage is temporary and that sustainability is at best a short series of short-term advantages. Arguably this is the most baffling management issue to date when an organisation is faced with a changing environment and increased competition. Instead of changing tactics, strategy and existing business practices, they drive their past successes and winning formula in order to sustain existing profits.

Organisation's innovative functions have very strong links to the market in which many product decisions consider the needs of the customer, because profitability is one of the key aspects to sustain shareholder value, namely government. A potential issue with this approach is that normally state owned entities fail in the face of new technology because they have a tendency to listen to the needs of their existing customer base and therefore innovate with this in mind. **They ignore or dismiss the potential implications of new emergent technology as being irrelevant to the needs of their existing customers such as electronic communication in this instance.** Therefore one has to consider the implication of these elements on branch managers as their roles need to be redefined to remain relevant in this ICT age. An implication of this is that the number of different influencing variables that need

consideration cannot be underestimated and now require close attention during decision-making and further business choices.

One can argue that technology is a way of life. Mature organisations such as the South African Post Office, with a history of success and limited competition possibly become less able to adapt to new technologies, preferring to seek out innovations that complement its capability, and avoid competence destroying technologies. If one considers this particular element more closely, this denotes that management is at times accustomed to matching its strengths with the disruption and ultimately performs all technological decision making in accordance to this.

Strategy in its context may remind one of the importances of matching a firm's resources with its capabilities. The important aspect to remember is that strategy is not the tactical decisions that are performed day-to-day. It's about understanding the strengths, weaknesses and threats of an opponent and combating these with opportunities that present themselves or newly created ones through the environment. The concept of competitive strategy to the researcher is about selecting a strategy that is unique and difficult to imitate, and this means choosing a different set of activities and tasks to deliver a unique mix of products and value to the customers and public.

This highlights that the strategic planning processes are evolving in their complexity as the organisation is caught between the matching of existing customer needs, or providing additional product benefit and functionality that is not currently being used by the consumer. If one considers the strategic planning process, then Johnson and

Scholes (1993) and Pettigrew's (1988) strategy process as cited in Boojihawon and Segal-Horn, 2006:6 applies. What does this mean for strategy and technology?

1.4 PROBLEM STATEMENT

The Problem statement is:

"The massive roll out of Public Internet Terminals is currently not enhancing the lives of the communities in the rural areas".

1.5 RESEARCH QUESTION

Brainstorming of the problem suggests the following research questions:

- How is a PIT's accessibility and supportiveness assessed in rural communities?
- How can the PIT system assist illiterate computer users in rural areas to bridge the 'digital divide'?
- What are the elements that cause government and SOE's to continuously use legacy and old technology?
- How can we promote and facilitate the introduction and implementation of ICTs?
- How can we accelerate ICT diffusion in the various sectors of the economy?
- How can we assess the impacts of ICTs?

1.6 RESEARCH OBJECTIVES

The above research questions were subjected to a SMART analysis and the following 3 objectives selected given the constraints of resources and time:

- To identify current perceptions of end users
- To ddetermine why are the PITs not fully utilised by the citizens
- To determine whether the Public Internet Terminals are operationally efficient and have enough resources, adequate equipment and efficient processes to be operational efficient

1.7 IMPORTANCE BENEFITS OF THE STUDY

In conducting this study a lot of unanswered ICT factors can be addressed. This study will be trying to assess if indeed ICT poses a challenge to the integration of undertaken programmes or whether there are other contributing factors. ICT can be a catalyst for effective development, but to play this key role it must be combined with appropriate developmental strategies. In a developing country, a development programme generally focuses on a combination of issues including, for instance, the alleviation of poverty, education, human skills building and the creation of a social environment that is conducive to the provision of universal access to basic welfare systems. ICT interventions in developing countries must address these issues and align with the development programmes of the country being dealt with.

This study will benefit the South African Post office and their strategic partner, that is government, as it aims to assess if ICT can bring about the following positive effects to users or communities of PIT's:

- Enhanced motivation and creativity when confronted by the new learning environments
- A greater disposition to research and problem-solving focused on real social situations
- More comprehensive assimilation of knowledge in the interdisciplinary ICT environment
- Ability to generate knowledge
- Capacity to cope with rapidly changing, complex, and uncertain environments
- New skills and abilities fostered through technological literacy

The outcome of the study will benefit all potential investors and government by assisting them in channelling the relevant resources.

1.8 LIMITATIONS AND DELIMITATIONS

The efforts of the study will concentrate on the sampled regions of Western Cape, Northern region, Eastern Cape, Kwazulu Natal and Central Limpopo only. The findings of the study should not be seen as a base for other Provinces. Interviews will be conducted over a relatively short period of time which will result in the time horizon being cross sectional rather than longitudinal. The respondents may feel obliged to provide socially acceptable rather than accurate answers which may compromise reliability (Charlesworth, Lewis, Martin & Taylor, 2002:46). In an

attempt to address this limitation the researcher will start with self-administered questionnaires hoping that respondents will state their honest views because the researcher will not be present, and confidentiality and anonymity is assured. This will then be followed by individual interviews to explore the findings of questionnaires and identify inconsistencies. For the purposes of this research a user is defined as anybody who has used the facility more than once. A non-user on the other hand is a person who lives within the area and knows about the facility but does not use it.

Some interviewers do not have a minimum 3 year tertiary qualification and an extensive research experience.

1.9 SUMMARY

Government is showing the prospective for embracing change by embracing ICT as a means to communication. This brings increased pressure to their partners such as the State Owned Entities. The problem in context and review has highlighted the relevance of the problem area in the current times. The services offered to the public are becoming prominent factors for government to consider. Therefore innovation is viewed as the main vehicle to effective service delivery. The approach to follow will involve the exploitation of the underlying theoretical considerations to uncover the nature of the issues

CHAPTER 2: PROBLEM ANALYSIS/THEORETICAL CONSIDERATIONS

2.1 INTRODUCTION

This chapter further aims to explore the constructs opened up in the problem review with theoretical concepts and business models. The research statement is that the PITs have not enhanced the lives of the communities in the rural areas by providing easy access to government services. This chapter examines the theoretical principle underpinning the research problem.

2.2 THEORETICAL CONSIDERATIONS

The societal needs and rapid pace of technology require government and State Owned Entities to be innovative in addressing service delivery issues, hence the introduction of PITs. To survive in such turbulent environments a dynamic **strategy** and management approach that can incorporate or leverage changes in order to flexibly respond to presented opportunities is required. Johnson and Scholes (1993) have opened up some elements of theoretical concerns (Refer Figure 2.1)

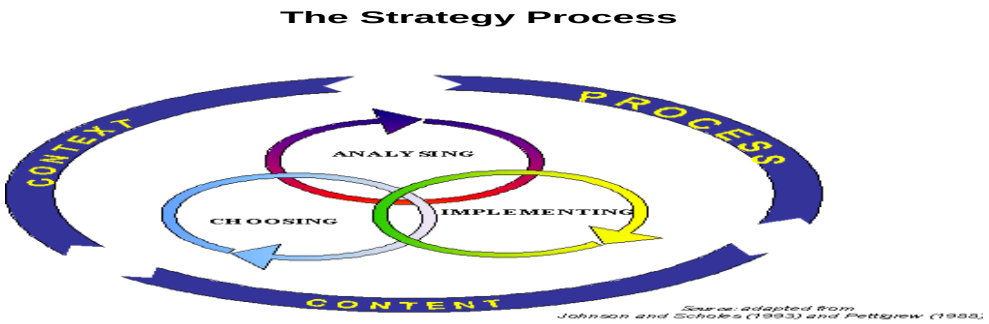

Figure 2.1: Strategy process (Source: Johnson & Scholes (1993) and Pettigrew's (1988) as cited in Boojihawon & Segal-Horn, 2006:6)

Figure 2.1 denotes strategy as an iterative process through time and argues that all forms of strategic thinking and decision making (from analysis all the way through to implementation) are influenced by a combination of internal and external factors, and take place in dynamic contexts, and facing an uncertain future. This implies that as a manager of an organisation one should be able to:

- Objectively assess the organisation or firm and its environment (analyse)
- Formulate and select a pattern of activities that maximises the chances for success (choose)
- Implement the selected pattern of activities within constraints of dynamic internal and external contexts (implement)

SAPO as a company need to continuously assess their strategy to determine its success and if there were any emerging trends that might necessitate a need for change in strategy or realignment to meet changed circumstances, technology, et cetera.

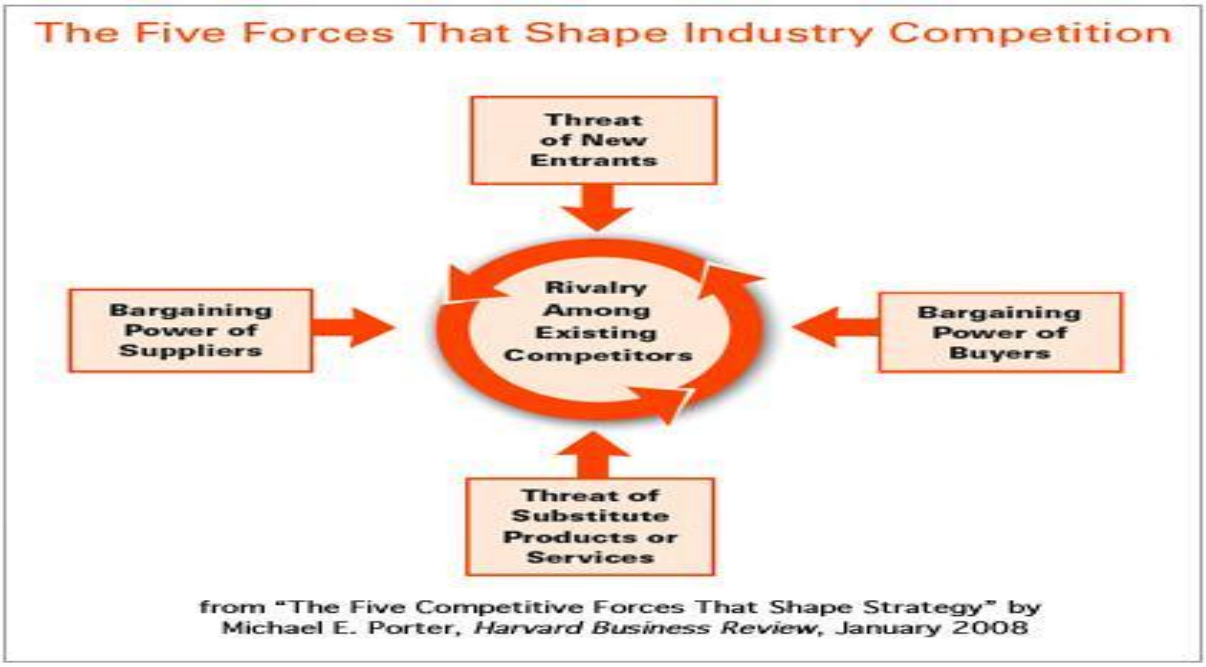

Figure 2.2: The five forces that shape strategy (Source: Harvard Business Review, Jan 2008)

The PITs perform poorly due to the lack of maintenance of equipment which results in regular breakdowns. The breakdowns impact on branches achieving operational efficiency. Porter (2008) indicates that industry structure derives competition and that **technology and innovation** are factors that impact the primary forces shaping competitive strategies and ultimately industry structures (Refer Figure 2.2). He asserts that for a company to achieve competitive advantage, it must be able to undertake one or more value creating activities in a way that creates more benefits for customers than competitors create. Superior value is created through lower costs or superior benefits than competitors provide.

The approach to applying Porter's 5 Forces Analysis follows a number of key steps which could help to:-

- Determine the scope of the sector to be analysed, but not too narrow so as to miss important factors
- Identify and analyse all relevant forces for this sector
- Examine current and potential future states of the five competitive forces
- Identify options to influence the forces in the organisation's interest
- The objective is to reduce the power of competitive forces

Porter's model can be complemented by Fahey and Narayanan's model (1986) of the macro-environment (Refer Figure 2.3) which notes the importance of going beyond the mere description of the relevant social, technological, economic, political, legal and environmental (STEP/LE) factors to assessing the forces driving it (Bakhru, 2010:10).

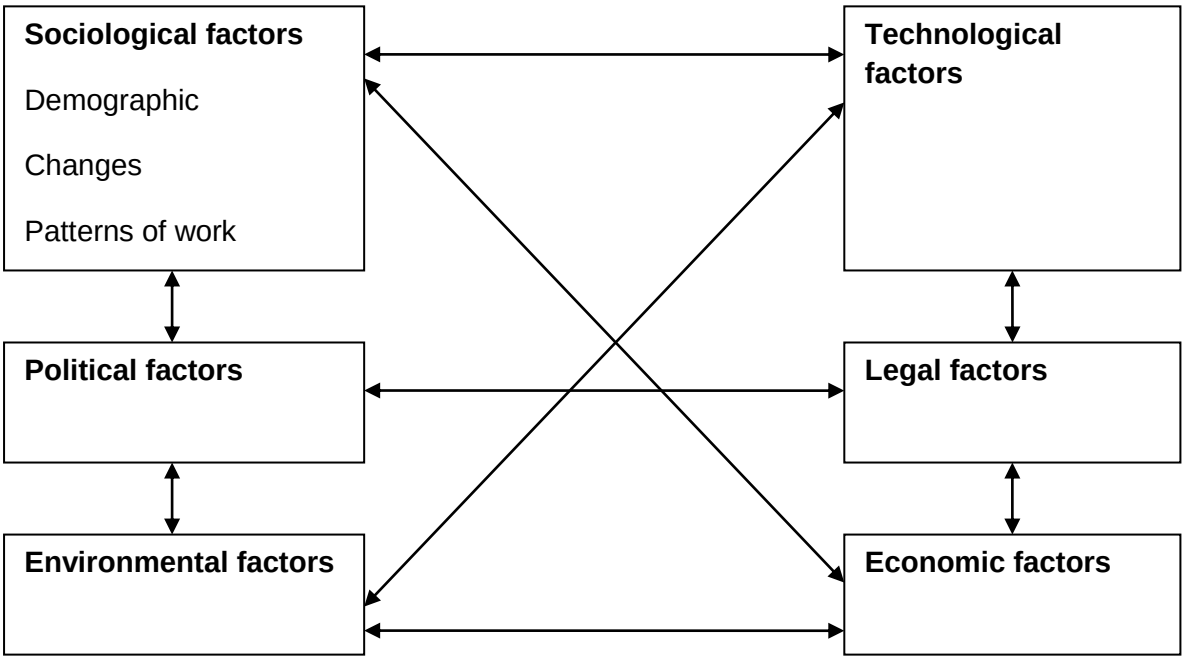

Figure 2.3: Model of macro-environment **(Source:** Fahey & Narayanan's (1986) model cited in Bakhru, 2010:10**)**

Strategy is also concerned with matching a firm's resources and capabilities to the opportunities that arise in the external environment (Grant, 2010:122). An interesting read from Grant shifts the interface between strategy and the external environment towards the interface between strategy and the internal environment more specifically with emphasis placed on the resources and capabilities of the firm. The real sources of advantages are to be found in management's ability to consolidate corporate wide technologies and productions skills into competencies that empower individual businesses to adapt quickly to changing circumstances (Matsena, 2012).

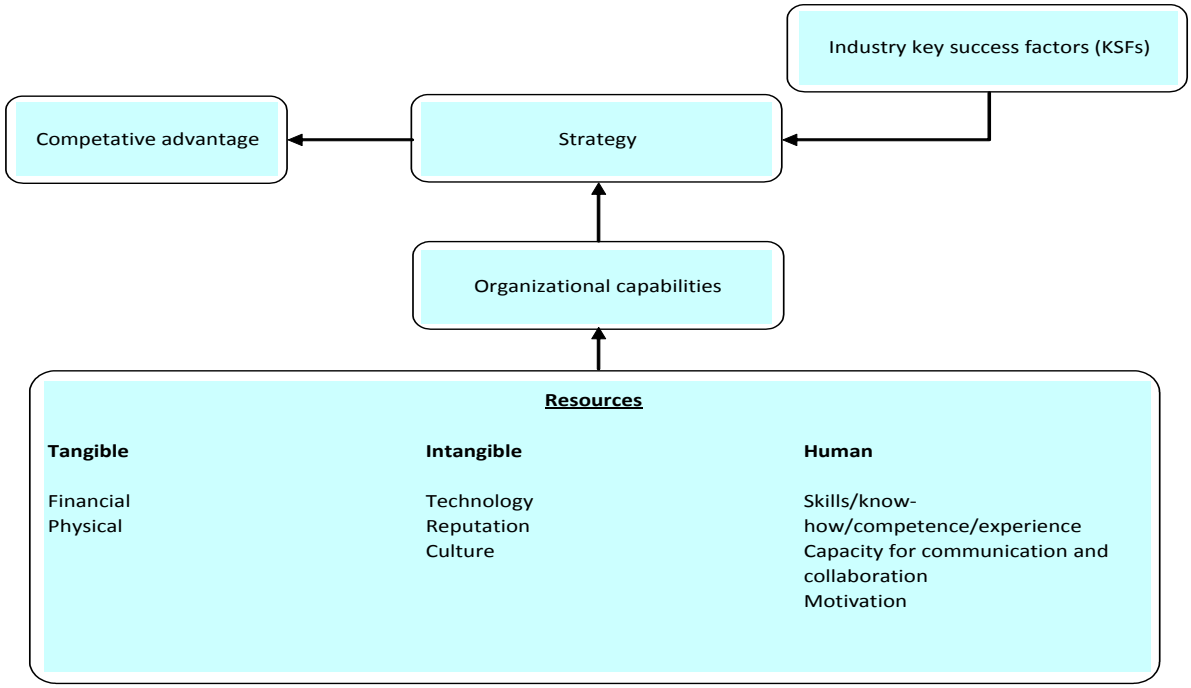

Figure 2.4: The link between resources, capabilities and competitive advantage (Source: Grant, 2005)

When considering future implications of the five forces, the threats of substitutes and decline phase of the South Africa's postal industry could mean that a lot more companies are entering into the industry and competition for human capital and innovation and creativity is therefore seen to be intensifying. Competition of skills occurs cross-industrially, and thus a fair internal assessment would include checking the bundle of capabilities SAPO possesses and a way to leverage on them. The implication will be in determining how well they are or should be used. Attention must focus holistically on human and other tangible and intangible support. For this a model by Grant (2005) in Figure 2.4 provides insight.

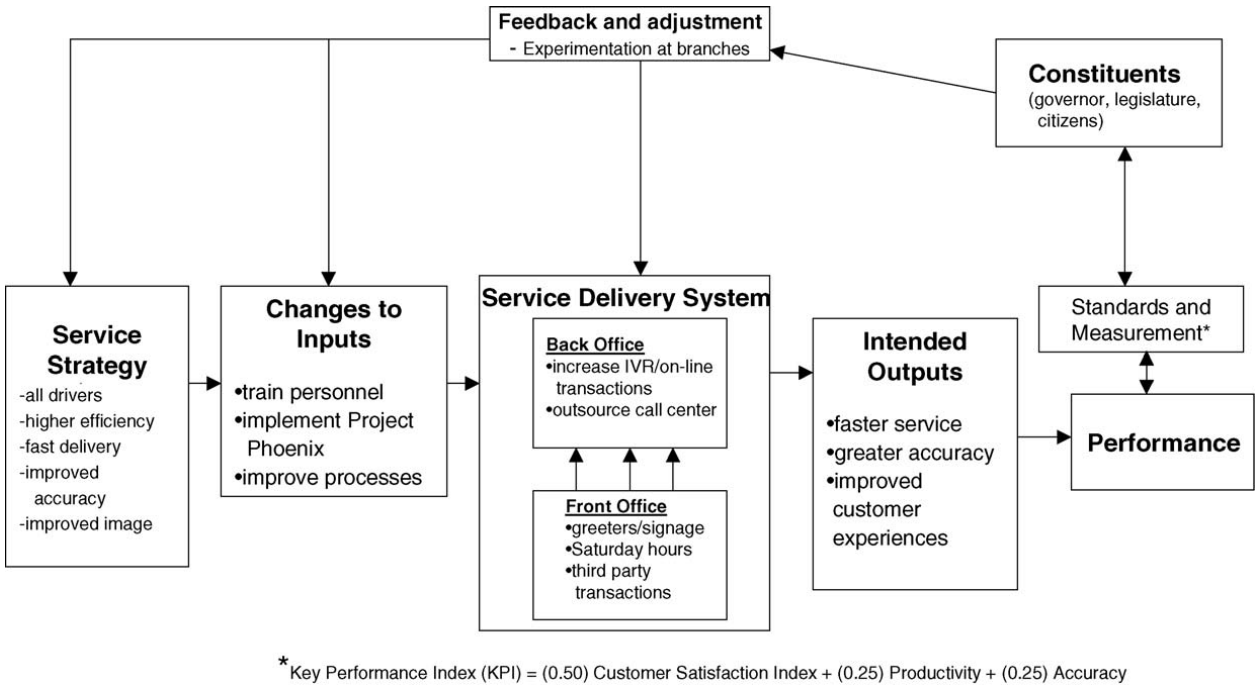

Figure 2.5: Porter's Diamond of Competitive approach (Source: Michael Porter)

Another model worth mentioning is Porter's Diamond of competitive advantage model. The model addresses four main attributes that shapes the national environment in which local connected firms compete. This component looks into the national conditions that determine how the Public Internet Terminals are created, organised and managed, as well as the nature and extent of domestic rivalry, for

example internet cafes. The concentration of operators competing in the South African telecommunications industry is relatively high (that is at present, 2 fixed line operators and five mobile operators), and subsequently competition is intense especially in the cellular mobile market. The South African market is also showing signs of saturation, with penetration rates attributed to consumers owning mobile phones in order to access the different bearer services. The providers are also targeting the same market segments and at the moment choose to ignore under-serviced and rural areas.

The European Foundation for Quality Management (EFQM) model (Fenton-O'Creevy, 2007a: 23) as shown in Figure 2.6, is defined as being a useful framework to develop a shared vision and goals, help identify and understand the systemic nature of business, its key linkages and cause and effect relationships. These make relationships among objectives in the various perspectives explicit so that they can be managed and validated. They should also identify and make explicit the sequence of hypotheses about the cause and effect relationships between outcome measures and the performance drivers of those outcomes. Every measure of the EFQM should be an element of a chain of cause and effect relationships that communicate the substance of the business's strategy to all levels of the organisation. This is necessary because one perspective can cause an effect on another or a number of perspectives. If SAPO as an organisation meets the needs of its customers, the organisation has satisfied the customers and therefore stands a good chance of retaining them and attracting new customers. Customer retention leads to a sustainable business and profitability, which in turn gives the organization the ability to develop staff and have happy and productive employees.

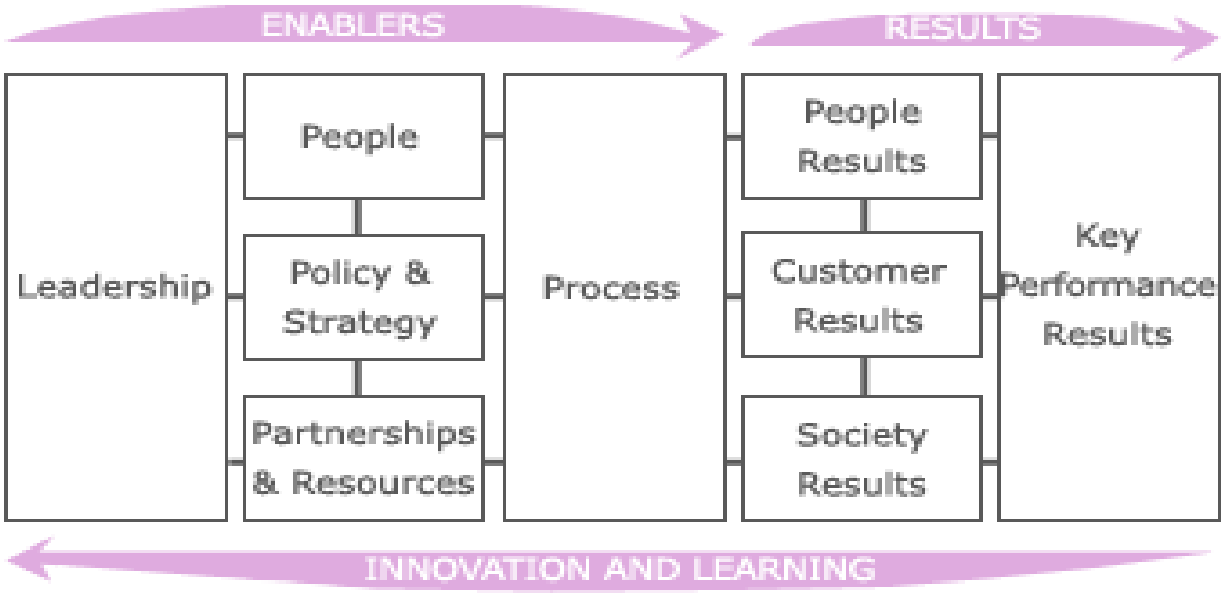

Figure 2.6: EFQM model (Source: EFQM, 2010)

Linking to the strategic planning as the EFQM model suggests is performance measurement. Assessing how the PITs and SAPO as an organisation are relatively performing in the industry is vital. Performance measurement within the context of the South African Post Office is facilitated through the Balanced Scorecard, as it allows for a holistic view of how different performance measures are related as is described by Fenton-O'Creevy (2007a: 24) under the 'Results' dimension of the EFQM model (Refer Figure 2.6).

Defining a Performance measurement as is cited by Fenton-O'Creevy (2007b: 83) would differ depending on which discipline it is being applied. As an example, finance would measure key ratios; quality would measure Statistical Process Control (SPC); et cetera. However, Fenton-O'Creevy (2007b: 83) makes one very important

observation by saying that, “First, effective performance from one perspective may depend on effective performance from another”. Fenton-O’Creevy (2007b: 83) goes on further to say that to understand how these different perspectives work together would only be understood if the strategic goals of the organisation are understood. He further suggests that there are relationships that would exist and that decision making would impact on each. To get a holistic view on how well an organisation performs Fenton-O’Creevy (2007b:83) cites, “Unless measures of performance are linked to an organisation’s goals we are only in a position to consider economy or efficiency. To understand performance effectiveness we need to consider how each perspective contributes to the achievement of strategic goals”.

This leads to the importance of decision making. Mintzberg is cited by Stapleton (2006: 7), as identifying the decision making role as one of the three distinguishing features of management. Stapleton (2006: 7) theories that the type of decision you make will depend on the type of organisation and level of responsibility, whereby typically operational decisions are taken by first line managers as is typically the situation within the SAPO operational environment where decisions in branches where PITs reside are taken by branch managers. One of the objectives is to understand how the decision making process will be improved, therefore knowing the type of decision making style to be utilised would help. Decision making within the SAPO environment is likely to be what the Stapleton (2006: 14) describes as “Operational decisions are often routine. They are generally well served by a rational approach.” March (1978: 19) argued that “…decision processes are often more complicated, confused and erratic than either theorists or managers like to admit.”

Thompson (1967: 32) developed a useful approach to decision making styles in which he presents a contingency theory on decision making.

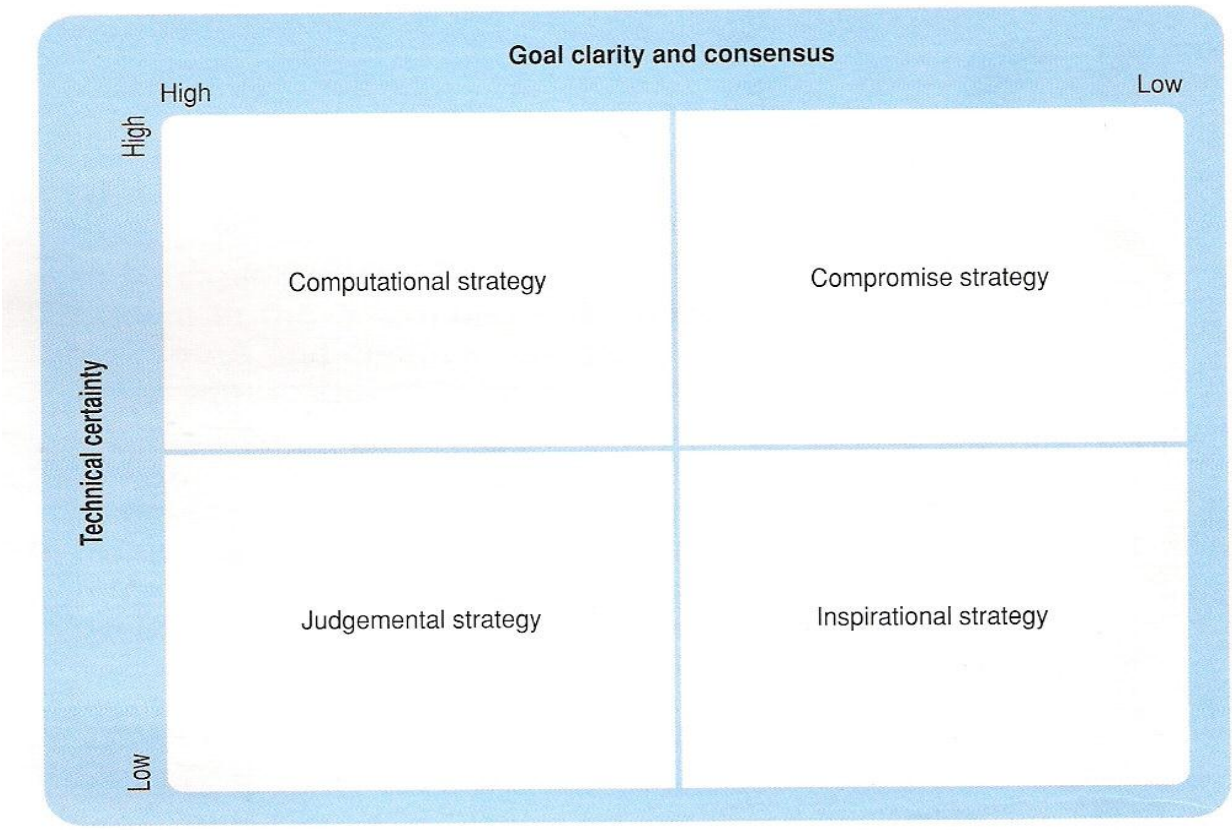

Figure 2.7: Contingency Theory (Source: Thompson: 1967)

There are essentially four styles defined using ‘preferences regarding possible outcomes’ and ‘beliefs about cause/effect relations’. Out of the modified version of Thompson’s matrix (2006: 34), four strategies’ emerged:

- Computational strategy – High goal clarity and consensus with a high technical certainty on how to achieve outcome, approximates the rational model
- Judgemental strategy – Involves decision processes based on judgement and experimentation, but within a context of goal consensus
- Compromise strategy - Political decision making with bargaining and compromise as the obvious way to resolve differences over goals, bounded rationality is likely to mean that managers aim for satisfactory rather than best outcomes
- Inspirational strategy – Little consensus is achieved in goals and how they could be achieved. Affirmation of shared values and identity are likely to be important to legitimize the process. It will be an inspired leap in the dark

It is also suggested by March (1978: 21) that managers need to be opportunistic and flexible as there is a risk of ‘decisional bias’ intervening. Within the SAPO environment it is extremely vital that managers stay flexible. Previous models by Grant identified dynamism as a competitive advantage to prevent a situation where customers cannot be accommodated because of inflexibility and where customer loyalty and providing opportunity for competitors to find entry to SAPO and government customer logistics are risked.

2.3 SUMMARY

This chapter identified five themes and provided a more comprehensive understanding of the importance of innovative organisations. These allowed for the problem to be critically unravelled in the South African Post Office environment. Aspects of the themes that relate to what the theorists had to say on the topics were identified. The next chapter will look into more depth at the academic analysis of the themes identified.

CHAPTER 3: LITERATURE REVIEW

3.1 INTRODUCTION

In this chapter the themes that have emerged will be critically reflected on through a review of the appropriate literature. These themes are:

- Strategy and Leadership
- Managing Innovation and Change
- Stakeholder and Relations Management
- Information and Communication Technology
- Behavioural Change and Poverty Reduction

3.2 INFORMATION AND COMMUNICATION TECHNOLOGY

In this review, the terms IT and ICTs will be used nearly synonymously and in a somewhat broad sense. In this study ICT will refer to the use of computers and specifically the internet. ICTs need a holistic evaluation in order to establish their appropriateness in the rural communities, especially in alleviating poverty. Adeya (2002) argues that in an ideal world, universal access to information would create a global information society, but since knowledge will hardly be global, the mode of interpretation will depend on the culture or tradition of people and societies. ICTs are entrenched in systems, services and networks that affect the accumulation and flows of public and private knowledge. According to the United Nations Economic Commission for Africa (ECA), the regional arm of the United Nations mandated to

encourage economic cooperation among its member states. ICTs cover: Internet service provision; telecommunications equipment and services; information technology equipment and services; media and broadcasting; libraries and documentation centres; commercial information providers; network-based information services; and other related information and communication activities. It shouldn't be regarded unusual for one to come across definitions of ICTs that are tantamount with those of information technology (IT). For example, IT is defined as "The group of technologies that is revolutionising the handling of information" and embodies a convergence of interest between electronics, computing and communication (Drew & Foster, 1994).

Ryckeghem (1995), Janczewski (1992), Manji *et al.* (1998) believe that 'cultural beliefs' are a hindrance to the adoption of ICTs in many poor areas. They continue to argue that issues that impact on successful implementation of ICT solutions are the environmental factors, such as temperature, humidity and sterility; however, whilst environmental factors may be important to highlight, they are not the main issues. Issues listed as the main infrastructural problems are power supply, telecommunication and maintenance. He further asserts that computers are products of Western civilisation and anyone who wants to implement them must be aware of the cultural differences. A framework providing some light on how information technology and culture interact has been developed by Ryckeghem (1995). He highlights the ways in which culture influences IT and how IT influences culture, with culture providing the condition for interpreting ITs utility. He refers to the simultaneous interplay between these three levels as 'IT practice'. He asserts that IT may not increase the productivity level of some workers whose culture is ingrained in

communality and is reflected in their work environment and information-seeking behaviour. Generally, man would prefer to consult colleagues or friends rather than visit a library or documentation centre. How does one transform such an information culture with IT or with the Internet? His conclusion **is that it is important to understand the work practices, organisational structure and concurrent attitudes in the African environments where IT is being introduced or has been introduced**.

This train of thought is similar to that of Hasan and Dista (1999) who compared the relationship between culture and the adoption of IT in West Africa and the Middle East. Eight cultural dimensions were contrasted with those in a developed country. The eight cultural dimensions used were based on the work of Hofstede (1991). In considering the factors for the adoption of IT, the researchers argued that, despite its importance to the success of IT projects, culture is the most difficult to isolate, define and measure. They used a qualitative methodology and took particular care to select, where possible, representatives of the local IT community rather than foreign advisers or members of multi-national corporations. Their conclusions were, every country must have an **IT policy that recognizes its culture** and ensures that the adoption of IT does not destroy the cultural heritage. It seems that problems arise when there is a difference between 'the culture of an IT product and the culture of its user'.

Manji *et al.* (1998) surveyed 103 human rights and advocacy organisations in most African countries to assess the feasibility of a programme for enhancing organisational capacity. They combine advocacy and governance issues with that of

culture and the acceptance of ICTs. Some of the findings, common to every country, include the wide disparity between organisations in their access to the Internet. Those with access 'hoarded' it and created even greater divergence between the 'haves' and 'have-nots'. Very few examples of a culture of sharing of either the resources or the information with those who are poorly resourced were found by researchers. In their brief analysis, they attribute this to the organisations being brought up in a culture of 'information starvation' with the sudden access to the Internet leading to information overload and a desire to consume everything while 'hoarding'. They recommend that organisations should not simply be provided with basic training in the use of the Internet, but should be trained in how to develop effective research capabilities. Some of the common problems of using IT in many African countries are listed and discussed, such as the high costs of government owned packet data networks.

An interesting read was that of Morales-Gomez and Melesse (1998) who say little is known on the long-term impact that ICTs may have on a country's social and cultural systems. The authors believe that the availability of ICTs is not by itself a reliable developmental approach, however noble its intentions may be. They argue that it is unlikely that **quantum leap reversals of marginalization and poverty will result from technology transfer** to the developing world. Policymakers and donors are advised to undertake a more rigorous analysis of social and cultural dimensions of ICTs to be able to design appropriate policies to harness ICTs for development in their own context. It is worth mentioning that the 'global village' is not global for most of the world's poor - not simply because technologies are not available to them, but because with or without these technologies the poor are likely to remain marginal in

the distribution of the benefits of society if they are excluded from the benefits of overall development. They concluded that the best long-term development investment that can be made using ICTs is to apply them to education and training.

Some methodological concerns related to ICT and culture can be found in Adam and Wood (1999) who studied the impact of ICTs on users in Africa from the perspective of the 'grounded theory' approach based on four main aspects of the impact of ICTs, namely: actual impact; potential impact; constraints; and actions centred on users and their reactions. The authors found that understanding ICT users within the context of their application of ICTs is necessary for impact assessment. They decided to use a purely qualitative approach to examine the interpretative understanding of users.

Mansell and Wehn (1998) focus on how ICTs can be harnessed for purposes of meeting development goals. They warn that if poor countries implement investment strategies that emulate the 'one person – one telephone – one Internet access point' model that is predominant in the West, frustration will be rife. In addition, they advance the view that there is little to be gained from access to global or local resources if the skills to select, interpret and apply the information are absent or poorly developed through the population. Consequently, they suggest it is important for poor countries to develop models for 'access' and 'information content' because the capacity to generate and share information about local resources is as important as access to distant digital information.

Braga (1998) builds a case that concludes that the countries that are better positioned to thrive in the new economy are those that can rely on: widespread access to communication networks; the existence of an educated labour-force and consumers; and the availability of institutions that promote knowledge creation and dissemination. This may suggest that developing countries are at a disadvantage in comparison to developed countries. Similar sentiments are shared by Mansell & Wehn (1998). Brown (2001) argues that ICTs are simply tools. Significantly, no single tool can solve a global problem such as poverty which has such complex and multiple causes. The author gives examples of where ICTs can play a significant role such as in the creation of jobs and in the reduction of distance. However, the author points out that it would be preferable if the labour-force were educated in this information age.

Chowdhury (2000) asserts that “ICTs do not have any more to do with poverty and food security in the developing countries than rain dances have to do with rain”. He notes that many sceptics have not seen the **role of ICTs in efforts intended to alleviate poverty and bring food security to developing countries**. The author acknowledges that the problem of poverty alleviation is complex. Efficient production systems and physical infrastructure are a few of the necessities.

Adebgola (1998) argues that deliberate steps should be taken to make sure rural communities have access to ICTs. If this is not done, the so-called digital-divide will just widen. The approach suggested is that of ‘info communes’ to help to overcome some of the impediments caused by the weak infrastructural base of ICTs in the developing world. On the other hand, Butcher (1998) is centred on education in

South Africa as a key developmental activity. He argues that, in South Africa, in order to harness the potential of ICTs, a lot of emphasis has been put on the concept of community centres as a strategy for implementation. This argument can be supported by the various publications on tele-centres in Africa including Benjamin (2000 & 2001). With reference to education, Butcher (1998) states that practical examples of the use of new technologies tend to reinforce the notion of the expanding gap between the rich and the poor instead of demonstrating practical solutions to the problem. He suggests that more resources should be spent on opening up access to marginalized communities in innovative and cost-effective ways, otherwise ICTs serve only to perpetuate greater economic and educational marginalization. He does not give any clear evidence of this and suggests there is a need that this be researched based on the many 'rhetoric' statements and anecdotal evidence.

3.3 STRATEGY AND LEADERSHIP

Adeya (2000) argues that the contention mentioned in culture and ICT puts into perspective a major challenge faced by policy-makers in Africa in efforts intended to develop strategies that can bring the information revolution to the continent. In essence, to create truly national integrated information infrastructures, there has to be the simultaneous acceleration of the use of high-tech and low-tech information services (Wilson: 1996).

Grant (2005) defined strategy as a unifying theme that gives coherence and direction to the actions and decisions of an individual or organisation. The process starts with

developing a strategic vision, setting objectives and developing plans to achieve these objectives. This is then followed by the implementation and execution together with the continuous monitoring and evaluation of the organisations progress. A company's strategy thus indicates the choices its managers make about how to attract and please customers. It entails the development of a strategic vision and then is followed by the implementation and execution to achieve the objectives.

Moncrieff (1999) indicated that strategy is partially deliberate and partially unplanned. The planned element comes from two sources, namely: "emergent strategies" that result from the emergence of opportunities and threats in the environment; and "strategies in action" that are ad hoc actions by staff throughout the organisation. The dynamics of the telecoms environment will set focus on the ad-hoc actions which places additional pressure on management in general. There will now be a requirement to dedicate resources and time to thinking strategically instead of operationally. This implies that every future decision has to therefore be made with some strategic intent, but from one's self-reflective, the decisions are usually made to take care of the most immediate need.

The model proposed by Moncrieff (1999) shows that strategy is planned and emergent, dynamic, and interactive. There is an interaction of five general processes. These are: (1) strategic intention, (2) the organisation's response to emergent environmental issues, (3) the dynamics of the actions of individuals within the organisation, (4) the alignment of action with strategic intent, and (5) strategic learning. The continuous monitoring of these strategic outcomes produces input into strategic learning. This learning comprises feedback into internal processes, the environment, and strategic intentions. Thus the complete system amounts to a mix of

feedback loops. The system is self-adjusting only to the extent that the organisation is prepared to learn from the strategic outcomes it creates - that is, continuous learning and strategic thinking are imperative processes. In this model, the distinction between strategy formation and strategy implementation is non existent. In a high technological driven industry where the rate of emerging technology has the potential to quickly invalidate an organisation's strategic plan, the sequential approach to strategy can be conceived as insufficient. A simultaneous and continuous approach to strategy produces a number of potential benefits. The main benefit is attributed to the fact that there is a definite time-lag between when an opportunity is identified until it is taken advantage of by the organisation - that is, time elapses from formulation up until implementation. This aspect is very critical in highly dynamic environments like the telecoms industry. Risk reduction is also another factor that arises due to the simultaneous approach. The sequential approach requires committing resources at a very early stage in terms of capital, people and time, whereas the simultaneous approach continually evaluates and dynamically adjusts resource requirements. The simultaneous process also continually adjusts strategies according to the changes in the competitive environment, but can established organisations really adjust their strategic planning procedure to take advantage of this benefit. The high rate of strategic adjustment demands that the industry occupants are able to respond to, and manage change more effectively. This combined strategic model is an effective means of managing the organisations tactics, however the strategic intent variable and every other type seems to be reliant on each other. This produces a single point of failure if feedback is not received or not received in time. For instance, the emergent strategies can

possibly take a long time in a large organisation to filter through the structures and teams.

3.4 POVERTY REDUCTION THROUGH ICT

Poverty is a frequently used word and has been defined in various ways. The aim of this literature review is not to delve into these definitions, or to emphasise poverty as a topic, but to assess the relationship between ICTs and Poverty by examining for instance, what literature exists that attributes poverty reduction to ICTs. Absolute poverty refers to subsistence below the minimum and socially acceptable living conditions. On the other hand, relative poverty compares the lowest bracket of a population with the upper bracket. Most development practitioners focus on reducing absolute poverty because of the urgency associated with starvation, malnutrition and other afflictions. Yet, relative poverty is not an exogenous factor in the fight against absolute poverty. Thus, most rights-based approaches focus on relative poverty because they do not want to acknowledge the existence of what can be described as first-and second-class citizens. In the context of ICTs, the significance of the distinction between absolute and relative poverty is evident in Wresch (1996) who argued that for poor people as opposed to rich people, information and communication costs more in absolute terms, and cost 'astronomically' more in relative terms as a percentage of a day's wages.

According to Lok-Dessallien (1999), there is a considerable body of literature on different types or categories of poverty indicators. His work attempts to present an overview of different concepts of poverty, as well as to approaches to its

measurement. The work highlights the point that much still remains to be done to expand conventional sets of indicators to make them reflect a broader understanding of poverty. At a conceptual level, Lok-Dessallien points out that poverty can be viewed in absolute and relative terms. In addition, it can be approached from objective and subjective perspectives. He also discusses poverty in relation to selected and commonly used concepts that tend to co-occur with this term. These include: poverty and equity; poverty and vulnerability; poverty and exclusion; poverty and underdevelopment.

The United Nations Development Programme (UNDP) incorporates the view that poverty is "not merely in the impoverished state in which the person actually lives, but also is the lack of real opportunity – due to social constraints as well as personal circumstances – to lead valuable and valued lives" (UNDP, 1997:15). A lot of research related to poverty focuses on insufficient nutrition, inadequate shelter and so on, and there is insufficient work on poverty vis-à-vis ICT. It is only recently that some have started to argue that lack of access to information and communications technologies (ICTs) is an element of poverty. It is although recognised that ICTs have the potential of having a crucial role in poverty alleviation efforts. In this respect, Kenny discusses the use of ICTs in poverty alleviation in relation to poor people's limited access to ICTs. He proposes the implementation of government policies that might help to overcome the so-called 'digital-divide.' The international community has been debating about this 'digital-divide', and the role of ICTs in combating poverty and fostering sustainable development.

Marker *et al.* (2001) outlined for the Department for International Development (DFID) staff the principles underlying a proposed approach to ICTs and

development. The contrast between the complexity and expense of some of these technologies and the need to address the urgent basic needs of the poor has led some to doubt whether ICTs should be a priority for DFID and other development agencies, as well as for developing countries themselves. The authors address this doubt and conclude that access to ICTs should not be seen as an end in itself. Instead, the measure of success should remain progress towards reaching the International Development Targets and not the spread of technology, or the bridging of the digital divide. They note however, if properly deployed, **ICTs have enormous potential as tools for increasing information flows and for empowering poor people.**

One of the interesting reads was that of Camacho (2001) who asserts that the digital gap is a result of other social gaps, and the gaps will continue to grow if the technology is not used correctly. He says it is based on the fact that as an example, the developed countries are creating the core software and hardware for the Internet. In addition, 90% of Internet production is not only in English, but is also mostly produced in the developed countries. Moreover, the sites are presented in concepts typical of the West. Finally, the possibilities of access and use are completely related to levels of development of electrification, telecommunications and education. The questions addressed in the study include: **how can developing countries learn to appropriate the Internet and create national conditions to use it appropriately? How can they derive advantages from ICTs?** The search for solutions and answers to these questions left him wondering whether the challenges presented by the questions should be a priority task for organisations and governments, given the

great needs facing people, such as basic infrastructure needs and literacy, which may necessitate the promotion of electronic literacy. These concerns are partially answered by Canning (2000) who echoes what many have been said over the years that the Internet promises to allow more dissemination of ideas and technology that will grant developing countries easier access to the skills and techniques needed to take advantage of globalisation.

The relationship between ICTs and poverty does not come out clearly in most literature reviews; Pigato's (2001) paper focuses on this relationship. The two objectives of the paper were first to examine patterns of utilization, ownership and affordability of ICTs. His main focus was on the United States of Social Administration and South Asia. The other objective was to suggest ways through which information and ICTs can best be used in poverty alleviation strategies. The author found that the two countries of focus have the lowest ICT access and within countries there is urban/rural and rich/poor divide. Moreover, there is an unmet demand for information. He further points out that the private sector initiatives are most successful while those led by governments for rural development have mixed results while the externally funded initiatives have numerous drawbacks. The paper advocates the need for an integrated framework to develop appropriate policies of access and diffusion of ICTs within developing countries, but evidence shows that technology is not a goal in itself. Instead, it is a means for achieving development goals.

According to Samiullah and Rao (2000), there are those who sincerely believe that ICTs have the potential to combat rural and urban poverty and foster sustainable. However, this can only be achieved if **ICTs are appropriately deployed and made to address the differential needs of urban and rural people**. The authors argue that successful ICT interventions can only be achieved if there is an enabling environment, the participation of the private sector and NGOs, the free flow of information, and capacity building. They challenge governments to address the issue of the digital-divide by first ensuring that there is synergy in projects regardless of sponsorship background.

Hudson's (1984) volume was one of the first to examine the role of telecommunications in rural development. While it seems obvious that telecommunications contribute to the efficient operation and productive growth of an economy, telecommunications may be a cause, a consequence, and a manifestation of development. The purpose of this volume was to consolidate research in the field in order to make it more widely available, and to put research questions and findings within a development framework. Sixteen years later, Kenny *et al.* (2000) conducted an empirical study where they argued that econometric studies have found increasing evidence of a causal link between telecommunications development and economic development; however, most evidence springs from the **high returns on investment** in the telecommunications sector. Some studies have extended these correlations to other indicators, such as social development, cost savings for industry, and increased transport efficiency. The Internet's potential is discussed at

micro-level, in the sense that it provides an opportunity for firms and entrepreneurs to reduce costs, increase market coverage, and achieve economies of scale.

Hudson's (2001) argues that, if information is critical to development, then ICTs as a means of sharing information is not simply a connection between people, but a link in the chain of the development process itself. ICTs can contribute to socio-economic development, but investments in them alone are not enough for development to occur. Consequently, ICTs should complement other infrastructures required for development such as clean water supply, transportation and electrification. The availability of information sources for the poor is an area that has been addressed for years. Despite this interest, even when information is available, on many occasions the poor do not get access to it either due to poor infrastructure, ignorance or illiteracy. In Wresch's (1996) view, there are four information problems frequently faced by the poor: geographic isolation, lack of communication channels, language problems, and lack of computer systems. Two of these are directly ICT related constraints, given the crucial role of communication channels and computer systems. In the case of geographic isolation, the key message is that electronic links are used to supplement face-to-face contact, not to replace it. Many poor suffer from lack of communication beyond their local confines.

Kenny's (2002) contribution is on the costs and benefits of ICTs for poverty alleviation. The author reviews the characteristics of the 'average' poor person in developing countries, and suggests the potential that various old and new ICTs (radio, telephony and the Internet) have for direct poverty alleviation. The analysis is

pegged to the premises that: they are poor; they are rural; they are unemployed or work as subsistence farmers or unskilled wage labourers; they are badly educated; and they are part of minority ethno-linguistic groups. The author attempts to quantify the significance of barriers to the use of selected ICTs, and also some of the costs and benefits entailed in the provision of ICTs.

On the issue of specific ICTs, Kling (1996) gives examples of the benefits that have been brought by computer-based technologies and notes that computer systems are one of the few technologies where the power and flexibility of the devices increase, while the costs decrease by an order of magnitude every decade. However, he notes that computerization is also the source of problems. The author notes that computers are harder to work with than they really should be, although the minor problems tend to overshadow the social problems of great significance. In King's view, much of what has been written in the press identifies computer-based systems with cost savings, efficiency, and productivity. Furthermore, many have emphasized that computer-based systems are central to developing a dynamic economy, but this is still an area of controversy, since such systems can lead to unemployment in certain industries. Some of the areas he identifies as potentially debatable include the following issues:

- Work life (can computers and telecommunications systems improve the flexibility of work?)
- Employment (how does computerization alter the structure of labour markets?)

- The divisions within society (Are there ways to structure National Information Infrastructure systems so that more people can participate in the mainstream of society?)
- Democratisation (To what extent do computers and telecommunication systems offer new opportunities to strengthen democracy through online access to the records and reports of government departments?)

Proenza (2002: 6) notes that ICT development strategies in Latin America must address the central challenge facing the regions poverty and persistent pervasive inequality. The author claims that no one knows how possible this is because there is still a lot of trial and error as the constraints on ICT expansion in the region are overwhelming. In his view "what is clear is that economy wide returns to ICTs are high; that unless the issue of poverty takes centre stage, new rich enclaves will arise and leave poverty largely untouched, and that State action can help determine the extent to which ICT benefits are broadly shared". In this regard, the example given is that connectivity to the Internet can enable low-cost access to governmental services, agricultural products, market information, project and local investment opportunities, job vacancies, distant education and community development networks.

This can be confirmed by Kibati's (1999) research on access to communication services for the low-income, mostly rural and poor population in Kenya. Its setting was a situation where there was a lack of, or inadequate, information infrastructure. He proposed a cost model that contrasts GSM and CDMA networks. The author

investigated current ICTs as well as the projected evolution towards more advanced technologies that are capable of handling broadband data communication. The model conceived determines that CDMA deployments instil flexibility and better evolutionary properties to the network without the burden of extra costs for the operator. He recommends that the Kenyan government should de-link the wireless local loop regulation from the regulation of wire based local access and allow the immediate private provision of fixed wireless local loop services. The research was a combination of on-desk research, sensitivity analyses and baseline parameters.

Schon *et al.* (1999) wrote that, to design policies that would capture the benefits of ICTs for the poor, there is the need to understand that poverty is not simply a lack of adequate income. Their thesis – though based on low-income communities in the USA – is that the poor are hurt more by exclusion from the mainstream economy and society, and feel disempowered to improve their situation. In many situations, it does make them feel like they have no useful valid knowledge to offer. To some extent this is true of many in the developing world when they try to lobby or bring their issues across to those in the developed world who hold the purse-strings and decision-making powers on many critical issues.

The authors concluded that the poor, even if provided with access to IT are unlikely to transform themselves from consumers to producers of knowledge because IT reinforces for the poor the idea that machines know more than they do. The truth of this cannot be fully argued in the context of their book. From an African perspective, Butcher (1998) suggested that the repetition of rhetorical statements on the developmental potential of ICTs has started to ring hollow, raising more questions

than answers. The following is an attempt to answer some of their concerns from existing literature, although some were written after their papers were published.

One of the only researched studies which relates to ICTs and small enterprises was conducted by Duncombe and Heeks (1999). The study was done in Botswana, where the authors found that investment for Internet access was significant in terms of initial financial outlay, running costs, time and skills. Such investments need to be accompanied by significant benefits in terms of the frequency of use and the quality of the information provided. It was clear that only in specific sectors – such as technical services, the IT sector, and travel and tourism – could benefit of information access be achieved. These are all sectors that require regular access to information and/or software across borders. The researchers note that, information-related interventions by entrepreneurs or institutions must recognize the critical and continuing role to be played by informal information systems and human interaction. They concluded that a holistic approach to the information economy is required which provides information skills, communication skills and assistance with improving organic-, literate- and intermediate- technology based systems as well as the more obvious ICT-focused areas. The role perceived for ICTs in this process lies in the context of the overall information needs of the enterprises, using three main decision criteria: prioritising ICTs in overall business development; assessing how ICTs can be successfully and cost effectively applied; and establishing how ICT constraints can be overcome.

There are some success stories that highlight the need for optimism on what the poor could achieve by having access to information technologies. One example from

Peru is Quipunet. It is a global virtual network using mostly e-mail to communicate and is a financially self-sustaining project (Delgado *et.al.* 2002). The main objective of Quipunet is "to channel resources, materials and knowledge available all over the world to people in need in South America, with emphasis on Peru". The virtual network assists in the development of affordable communication networks, promotes the development of educational programmes and helps support professionals residing in Peru to disseminate Peru's indigenous medicines and its Inca heritage to the global market. Their message is that **simple ICT, combined with a lot of personal effort can bridge the gap that developing countries are facing against the growth of the new technologies**. The key lessons are that the focus should not be on high technology, but on co-operation and communication. It is significant that the participatory nature of the project enhanced community interest in it. Another lesson was the importance of relying on their own funding first in exchange for their independence. Now that it works well, Quipunet is ready to look for external support for further development. The final lesson was the importance of learning by doing which has made it possible for many volunteers to acquire basic and practical knowledge of ICTs.

The initiative has been a success in bringing strange bedfellows (housewives, students, architects, engineers and so on) together is that only e-mail; the simplest Internet technology is used to communicate. One hindrance has been the creation and maintenance of a communication access channel for people in rural areas. Regardless of the development of telecentres the communication channels constantly breakdown. For this reason, Quipunet members still have to resort to the use of telephone, fax, or even messengers to carry documents to the rural areas, a

clear indication that there is still a gap even within the country where the use of ICTs is spreading rapidly.

3.5 INNOVATION AND CHANGE

Organisations have to transform (Lanning, 2001). They cannot survive if they are static (Kotter, 1996). What causes organisations to change is usually not one special factor, but a convoluted web of forces of change (Lanning, 2001). Longenecker and Pringle (1984), states that organisations are open systems. This means that they interact with their respective environments and are subject to constraints imposed by those environments. Burnes (2004: 264) states that the “open system school sees organisations as composed of a number of interconnected sub-systems”. It follows that any change to one part of the system will have an impact on other parts of the system, and in turn, on the overall performance (Scott, 1987).

Bennis and Tichy (2009) referred to Organisational Development (OD) as a response to change, a complex educational strategy intended to change the beliefs, attitudes, values, and structure of an organisation so that it can better adapt to new technologies, markets, challenges, and the dizzying rate of change itself. This approach is described by Cummings and Huse (1989: 555) as the “application of behavioural science knowledge in a long range of effort to improve an organisation`s ability to cope with changes in its external environment and increase its internal problem solving capabilities”.

Organisational development is a unique organisational improvement strategy that emerged in the late 1950s and early 1960s (Lewin, 1958). It evolved into an integrated framework of theories and practises capable of solving or helping to solve most of the important problems confronting the human side of organisations (Burnes, 2004). OD is about people and organisations and people in organisations and how they function (Lewin, 1958). Burnes (2004) adds that it is also about planned change; that is, getting individuals, teams and organisations to function better.

Burnes (2004) states that the open system school of thought does not just see organisations as systems in isolation, however they are open in two respects: Firstly, they are open to, and interact with their external environment. Secondly, they are open internally; the various subsystems interact with each other. Therefore, internal changes in one area affect other areas, and in turn have an impact on the external environment, and vice versa (Buckley, 1989).

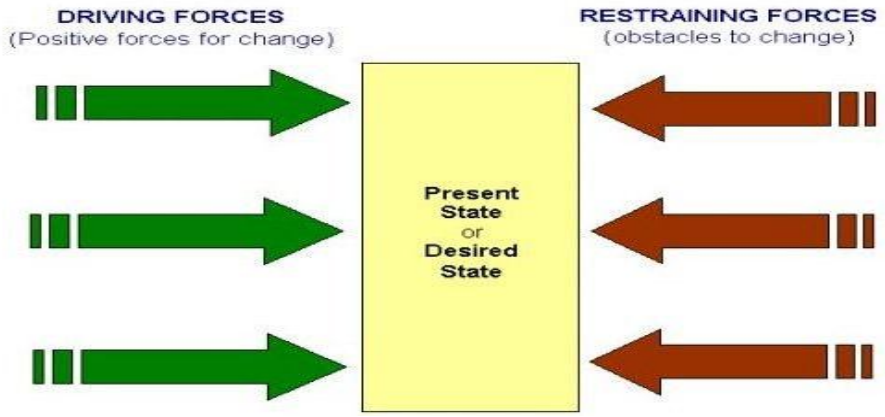

Figure 3.1: Change Management Model **(Source:** Kotter**)**

Transformation in organisations can be stressful, but depending on the kind of change, this stress can be managed (Kotter, 1996). Change that is sudden or drastic is more likely to cause stress or resistance, whereas gradual and programmed change is easier to manage (Nahavandi & Malekzadeh, 1999).

Lewin's model of organisational change highlights the importance of spotting and working with the force at play (Green, 2009). The forces pushing for change are driving forces while those working against change are called restraining forces. Lewin believed that the stability of human behaviour was based on a quasi-stationary equilibrium supported by a complex field driving and restraining forces (Burnes, 2004). Lewin`s force field analysis states that there are two forces in operation in the social system, those driving change, and those attempting to maintain the status quo. If these forces are in "equilibrium, to bring about change, an organisation needs to either increase the strength of the driving forces, or decrease the strength of resisting forces or ideally work on both simultaneously" (Linstead, Fulop & Lilley, 2009: 641). If successful, the organisation moves to the next phase (Lanning, 2004).

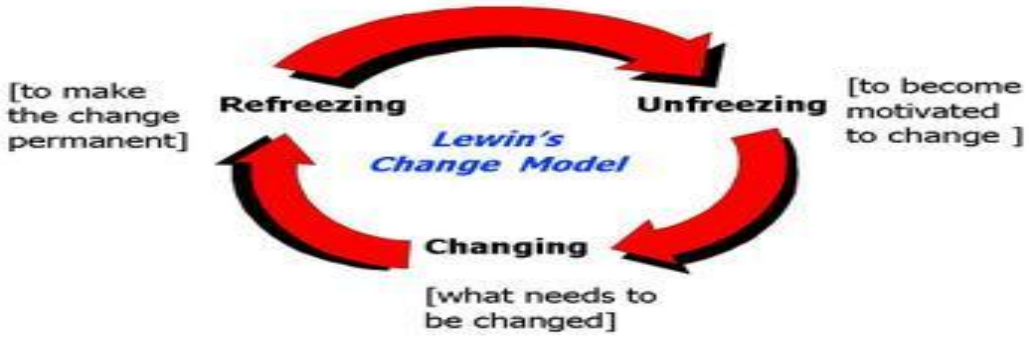

Figure 3.2: Lewin's Change Model (Source: Kurt Lewin)

One of the most prominent aspects to surface in management circles has been the internal debates as to how organisations successfully deal with change. On one side of the fence, one believes that change is about changing people and their mind-sets and then on the other, it is about changing the systems and processes that drive change in people's behaviour. At times one is led to believe that the decomposition of organisational routines and procedures are much easier to accomplish in recent times because of technology. It can be perceived at times to be the solution to most issues related to organisational performance and service delivery challenges. Some might be of the belief that technology can now ensure that the approval workflows governing organisations are performed efficiently and the excuse of long decision making trees are minimised. In reality, how true is this? The now environment requires organisations to react fast and be extremely flexible. What kind of organisation will thrive in the fast-moving and ever-changing market place: a rigid organisation whose members cling to old ways out of fear, or an innovative one that

seeks and embraces change? The now business environment is filled with ambiguity and incoherence, which now includes turmoil and changing strategic initiatives and very unpredictable conditions. This is placing enormous pressure on organisations for change, especially changes in technology. Leading in turbulent environments creates panic, uncertainty and nervousness amongst the leaders and employees of any organisation. In response, these organisations tend to develop some bureaucracy in their processes, systems, routines and procedures that might lead to these changes being embedded into the firm's disposition. On one hand, these might be of a major advantage as they provide the benefit of developing and sustaining existing capabilities that increases efficiency, but on the other, changing them could prove to be cumbersome and challenging.

The culture of an organisation may exhibit more or less readiness for the changes that decisions bring about, and contexts less ready for change pose problems for managers in the implementation of decisions. Slater *et al.* (2002) recognise that culture is the centrepiece of the organisation's architecture, as the values implicit in culture shape the other elements of architecture.

Rogers (1998) described innovation as the process of commercializing or extracting value from ideas. Innovation takes place in many ways and in many different circumstances. Damanpour (1991) indicated that the adoption of innovations from the manager's perspective is concerned with the generation, development, and implementation of new ideas, products, technologies, structures, and administrative systems. In the context of an organisation, an innovation refers to adoption of an

internally generated or purchased device, system, policy, program, process, and product that is new to the adopting organisation as a means of changing an organisation; multiple innovations are intended to make a contribution to the performance of the adopting organisation. Damanpour's (1991) suggested there are two major innovation typologies relevant to marketing and that is, technical and administrative innovations, and radical and incremental innovations. He referred to technical innovation as the adoption of new technological advancement in producing products within the adopting organisation. On the other hand, administrative innovation is concerned with organisational structure and administrative processes and defined as adoption of a new structural or administrative process by the adopting organisation.

Tidd (2001) highlights that there are four broad categories named the 4 P's of innovation:

- Product innovation. The product or service itself is changed. A new type of toothpaste, a new diaper and a new insurance package are all examples of a product innovation
- Process innovation. The way the product is being developed, produced and delivered is changed. New manufacturing equipment for diapers or new office procedures for an insurance firm would be process innovations
- Position innovation. The context in which the product is introduced changes. There branding and repositioning of some types of medicine as health drinks for the fitness sector, is an example of a position innovation

- Paradigm innovation. These are changes in the underlying mental models of what the firm does. In a newspaper business, Metro challenged the competitors by giving away the newspaper for free

Kotler (1999) and Henry (1989) indicated that radical innovation occurs through the interaction of the science base, technological developments and the needs of the market. However, Freeman (1994), Drazin and Schoonhoven (1996), and Levitte (1980) disagree with the elements that influence innovation and signify that it is the internal processes that impact the organisations capability to innovate.

Porter (2008) argues that first movers have no guarantee of success. He further continues to outline some critical success factors that are associated with first mover advantages and disadvantages. The advantages include reputation, pre-empting an attractive market position, creating switching costs, assessing distribution channels first, locking in key suppliers, defining industry standards and establishing barriers. First mover disadvantages include pioneering costs, uncertain demand, coping with changing customer needs, irreversible capital investments, the effects of technological discontinuities and the appearance of substitute products.

Sporadic innovations result in new products that involve dramatic leaps in terms of benefit; however this gives rise to very negative consumer reactions and behaviour in the market segment. Lynn and Reilly (2002) presented key success factors for any product development process and then show how those factors relate specifically to radical innovation which they defined as an “innovation that uses an untested technology and creates a new market category”.

According to Christensen (1997), sustaining innovations are usually taken to market by the market leader, which therefore strengthen its position, while disruptive innovations are introduced by newcomers, which threaten the position of the established firm and lead to its failure. He further purports that the reason why low-end disruptions are hard for incumbent firms to handle is that they usually take place in the lower segment of the market. The established firm's processes and values are not appropriate for pursuing a low-cost business model, and the cost structure of the established company makes it impossible to develop low-cost products.

Christensen's theory is concurred by Tushman and Anderson (1986) where they indicated that innovations can either be competence-destroying or competence enhancing. They further signify that competence-destroying innovations are based on different technological knowledge or concepts, which make the firm's existing skills and knowledge irrelevant. On the other hand, competence enhancing innovations build on existing know-how; these tend to reinforce the existing order within the industry, while competence-destroying types tend to overturn the existing operations of new firms.

Not all organisations are plagued by the pattern of success followed by failure; they are instead faced by the challenges of dualism. Dualism is defined as an organisation **performing efficiently today while innovating effectively for the future**. According to Roberts (1990), organisations will find challenges in carrying out dualism in highly competitive markets. This is perhaps due to the fact that there are

only incremental modifications on existing products to meet market leadership and demand. Dualism will also be propagated down the command line, a top-down approach according to Roberts (1990), but Christensen (1997) states that it can originate at any tier and department/division within the company. Traditional management theories are concerned with the **efficient utilization, production, and distribution of products and services.** Operations and day-to-day responsibilities are predominant. The organisation, in essence does not devote time to thinking and learning about strategy. Handy (2002) also indicates that organisations need to build parallel structures and activities that would permit the forces of today and tomorrow to co-exist, that is processes that allow dualism. The two forces are known as upstream and downstream types. Downstream types are focussed with technical support for problems with the current products and in addition getting new products into the marketplace. Upstream forces are concerned with all the possible core technologies that act as future product enablers. A note here is that these two forces are competing with each other for resources in the organisation.

This implies that management therefore has to mediate and prioritise differences that arise in this particular type of behaviour. If the downstream forces are dominant then the sacrifice of using future technology in product development will be overlooked to meet tight schedules and market demands. These result in longer-term, forward looking goals and projects are sacrificed from shorter-term types. Another effect of this is that important technological changes in the marketplace or niche applications go undetected by an organisation. At the other extreme, if research or upstream

forces dominate, then the business is allowed to dominate work within Research and Development (R&D).

Government and State owned entities are very active in creating new ideas, but the problem arises when a decision has to be taken in terms of investment of funds and resources into them. Justification of expenditure is the familiar basis that many senior and executive managers consider before any action of sponsorship is taken. However, decisions regarding market research on the other hand are relatively much easier to justify and defend. Morone (1993) identified that a combination of radical and incremental innovations lead to success. Lynn, Morone and Paulson (1997) highlight the fact that discontinuous innovations through new product development ensure success, whereas extensions to existing products lead to market leadership. This leadership can only be achieved after the product involves a discontinuous innovation.

Kotler (1999), Barrett (1996) and Urban (1993) debate that, to reduce large scale losses, market research is a fundamental aspect of any organisation. Many products fail in the market due to the fact that they do not meet the consumer's basic need. Barrett (1996) established that 80% of newly launched products fail to impact the market after two years. Management theory shows that these types of market risks can be reduced by applying a diligent plan of market research, as a key driver. Barrett (1996) further signifies that if this approach is adopted by organisations then the chances of failure is non-existent. Roger (1995) also argued that discontinuous innovation implies that there is no market for a product; therefore potential consumer research may result in high negativity. Roger (1995) further debated that consumers

are not aware of their future needs, in other words they lack product foresight. This leads to a problem where King (1985) identified that market research can tell you what people did and thought at that point in time: it can't tell directly what might happen under a new set of market conditions. New products are always viewed by consumers in reference to past experiences with similar types. Roger (1995) states that customers require time to learn and experiment with new products. This raises the issue of how to deal with consumers with limited past knowledge and the ability to gather relevant market information in terms of research. Lynn (1997) suggests that trial and error be employed, whereby the organisation probes and learns by experiences in the market. Barrett (1996) differs in this sense that, this should not be trial and error but experimental design and exploration in terms of valuable experiences and incremental modifications done to satisfy consumers. Levitt (1980) agrees with Barrett (1996) and also indicates that the product should however have a clear distinction between value-added benefit and core functionality. Trusted management theory has also shown that to become profitable, an organisation has to consider the needs of the customer. Many have evolved to a stage that involves the customer as a co-developer.

According to Piatier (1984), a barrier to innovation is any factor that influences negatively on the innovation process. Positive influencers are called facilitators of innovation. Barriers are also known as obstacles, constraints and inhibitors. It must be noted that facilitators can turn out to be barriers and vice-versa as the organisation changes over time or as the external conditions evolve. Frost and Egri (1991) discovered that any resistance to innovation by staff and management is

seen as a barrier. King (1990) disagrees with this statement as sometimes the resistance may actually be a positive action that saves an organisation from making a uniformed decision. Barriers can be classified in a number of ways. They are usually based on its original source. The most popular classification is types that are internal and external to the organisation. Piatier (1984) noted these as endogenous and exogenous respectively. Jorde and Teece (1990) identified that know-how leakage and other activities of duplication can act as barriers. Patents and copy rights are required to protect organisations. However leakage occurs at the very early stages of the idea conception. Supply and demand issues may also present themselves as barriers. Storey (2000) identified 'short-termism' as the effect of pressure from, for example the stock exchange market on public organisations. The effect is that many innovation projects with a long-term payback period are often ignored by the organisation but are critical to its future survival. Increases or decreases in foreign exchange rates can also impact the Net Present Value calculations and projecting revenue on specific innovative projects. Piatier (1984) highlights the most popular barrier as being financial. The high risk associated with radical innovation influences decision making by sponsors and lenders negatively, as there is no willing investment. Tidd (1997) also indicated that external barriers may also surface at the inter-organisational level where the organisation has to co-operate at the regional, national or international level. He further highlights that these barriers can occur along the supply chain when distribution channels are problematic for a new organisation. Customers' negativity and reluctance of product change can also be an inhibitor. Many customers are quite content with the basic functionality of

their products. These barriers surfaces when XY caters for better products but XZ inhibits it.

Preissl (1998) stated that organisations are hesitant of planning projects as regulations may add the high uncertainty of time, cost and risk association. The possibility exists that regulations can place unnecessary limitations on the operations of an organisation. An important note is that regulation can act as a facilitator in some industries and an inhibitor in others. Jorde and Teece (1990) identified labour and consumer protection legislation, environmental regulation as some legal constraints. The legal protection of an organisations Intellectual property structure is quite a contentious issue as any loopholes allow innovation to be copied and replicated. As noted by Chesbrough (1999),.If an organisation has invested large amounts of money in a particular type of innovation and other cheaper methods allow it to be replicated by others, this can potentially cripple the organisation.

Preissl (1998) noted that internal barriers are composed of the characteristics of the organisational members, the characteristics of the organisation, and the management of innovation as a change process. Hence, according to Preissl (1998) and Piatier (1984), these can be easily classified into people/culture related, structure and strategy related. Barriers that are caused by perceptions, including bias and a lack of motivation and skills form part of an internal category. The alignment of organisational and personal goals can also be characterised here, according to Markham & Aiman (2001). For example, people that are experts in their areas may feel threatened by the changes that result from innovation. This forces the

company to rely on ‘champions of innovative change’ to promote the change aspect. The absence of these champions can be an inhibitor as discovered by Gemuenden (1988) and Hauschildt (2003).

Hendry (1989) indicated that the lack of commitment of top management to innovation, the acceptance of risk taking and a high rate of innovative failures are amongst the top rated barriers to innovation. Schoemaker and Marias (1996) also state that, decisions made by top management that are governed by beliefs and values regarding procedures and rules are also major barriers. Staudt (1994) also referred to the lack of suitably qualified personnel as a barrier which compliments Leonard-Barton (1995) view in that core capability can turn into rigidness during technological change in which organisations trap themselves into the status-quo. Tang and Yeo (2003) highlighted competence as barriers that are a result of a lack of creativity and new knowledge required for innovation.

CHAPTER 4: RESEARCH METHODOLOGY

4.1 INTRODUCTION

This chapter the aims to provide insights gained from the literature review in Chapter 3 enhanced and guided the research process. The population is defined, and contents of the measuring instruments are briefly discussed together with the reliability and validity issues. Particular attention is given to specific methods used and the field procedure to be followed to collect the data in order to answer the research questions successfully. Data analysis, quality of data and limitations of the data collected are discussed towards the end of this chapter.

4.2 RESEARCH DESIGN

There are many definitions of research design, but no one definition imparts the full range of important aspects. Aspects from leading authors are cited as follows:

According to Coldwell and Herbst (2004), the research design represents the strategy to be followed in the study and includes the plan by which the strategy is to be executed. The research design is also termed as the structure of the research and forms the holistic perspective of the study and demonstrates how the different parts of the samples, measurements and methods work together to address the research questions and objectives. The design is also responsible for specifying the procedures for collection, measurement and the analysis of the data. Coldwell and Herbst (2004) also suggest that the design must be experimental in nature which

assists in the acceptance and validity of the findings. This aspect is linked to the feasibility of the design, in which a good design must be able to be implemented.

Cooper and Schindler (2003:146) define research design as the blueprint for the collection, measurement and analysis of data. It aids the researcher in the allocation of his limited resources by posing crucial choices such as: Is the blueprint to include experiments, interviews, observation, the collection and the research situation or some combination of these? Are the methods of data collection and the research situation to be highly structured? Is an intensive study of a small sample more effective than a less intensive study of a large sample? Should the analysis be primarily quantitative or qualitative? The research design provides answers such as these: What techniques will be used to gather data? What kind of sampling will be used? How will time and cost constraints be dealt with (Cooper *et al*., 2003).

"A research design provides the glue that holds the research project together. A design is used to structure the research to show how all of the major parts of the research project, the samples or groups, measures treatments or programmes and methods – work together to try address the central research question" (Coldwell & Herbst, 2001:36). It can be thought of as the structure of the research. Research design specifies methods and procedures for the collection measurement and analysis of data.

4.3 RESEARCH APPROACH

Collis and Hussey (2003) defines research as a process of systematic inquiry that is designed to collect, analyse, interpret and use data to understand, describe, predict

or control an educational or psychological phenomenon, or to empower individuals in such contexts. Research encompasses activities that increase the sum of knowledge, hence it can be said that the research process begins with recognising there is a need for specific information.

Collis *et al.* (2003) argue that it is quite usual to apply a mixture of approaches when conducting business research. “The use of different research approaches, methods and techniques in the same study is known as triangulation and can overcome the potential bias and sterility of a single-method approach” (Collis *et al*., 2003). The main advantage of triangulation is the greater validity and reliability of the research results (Denzin, 1978). Easterby-Smith, Thorpe Lowe (2002) distinguish between the following types of triangulation:

- Data triangulation which entails gathering data through several sampling strategies, so that slices of data at different times and social situations, as well as on a variety of people, are gathered?
- Investigator triangulation which refers to the use of more than one researcher in the field to gather and interpret data
- Methodological triangulation which involves using more than one method to gather data, such as interviews, observations, questionnaires and documents
- Triangulation of theories which involves using more than one theoretical scheme in the interpretation of the phenomenon

For the present inquiry a sequential triangulation of research methods was used, including focus group interview and survey research. This means that two different types of methods were used. One of these was qualitative and one was quantitative.

Thus, the intended research can be subdivided into two stages: (1) focus group interviews, and (2) survey research.

In the second stage, the quantitative survey method was applied (Dillman, 2000; Oppenheim, 2000). The findings from stage 1 as well as an extended literature review built the basis for the design of a questionnaire.

4.4 POPULATION AND SAMPLE

Watkins (2006) defines a population as a collection of all observations of a random variable under study and about which the researcher is trying to draw conclusions in practise. A population must be defined in very specific terms to include only those units with characteristics that are relevant to the problem (Zikmund, 2003). To allow inferences of the larger affected population that uses information to be made it becomes necessary to evaluate only a portion of the population that can be taken to be as a true representation of the population.

The population for this research is the total number of PITs implemented. The current statistics conducted indicate that there are currently 825 Public Internet Terminals. The target sample for this research was drawn from randomly selected individuals from employees of the South African offices at head office and branches. The study population will focus more on the following regions: Central (OFS),

Eastern Cape, Kwazulu Natal, Northern Regions (Limpopo and NW) and the Western Cape. The questionnaire was designed around the simplified four-point Likert scale using closed questions (Cooper & Schindler, 2001). The most important reason for choosing the Likert scale in this research, which is supported by Emory and Cooper (1995), is that the scale can be used in both respondent centred (how responses differ between people) and stimulus-centred (how responses differ between various stimuli) studies, most appropriate to glean data in support of the research problem in question.

The type of research to be undertaken can be classified as quantitative in nature. This survey method was chosen because questionnaires are easy to compile, cost-effective and confidentiality of the respondents is guaranteed.

Three of the more popular methods of probability sampling which can be used to select a sample are random sampling, systematic sampling and stratified sampling (Zikmund, 2003). According to Watkins (2006: 48), stratified sampling is “best suited to a relatively small sample and there is a strong measure of diversity amongst the population elements”. The systematic sampling technique was the one of choice in this research. This method ensures no members of the population are under or over-represented (Watkins, 2006). The systematic random sampling technique was used, which involved choosing the sample randomly from the existing employee population list or frame in all population groupings (Zikmund, 2003). According to Zikmund (2003), systematic sampling procedure is one in which an initial starting point is selected by a random process and every nth number on the list is selected. In this instance, every second name on the list was selected. From a database of names

from the employee register, names were drawn systematically to make up the sample population.

4.5 DATA TYPES/UNIT ANALYSES

Cooper and Schindler (2003:222) assert that in measuring one devises some mapping rule and then translates the observation of property indicants using this rule. To continue to say each data type has its own set of underlying assumptions about how the numerical symbols correspond to real world observations, the data types are identified as :

- Nominal data – the information is collected on a variable that naturally or by design can be grouped into two or more categories that are mutually exclusive and collectively exhaustive
- Ordinal data – whilst this measurement speaks of greater than and less than measurements, other descriptors may be used – “superior to”, “happier than,” or “above”
- Interval data – this data has the power of both nominal and ordinal data plus one additional strength that of incorporating the concept of equality of interval (the distance between 1 and 2 equals the distance between 3 and 4)
- Ratio data – incorporates the powers of the previous data types plus the provision for absolute zero or origin.

For this study the Nominal group technique was preferred as it is valuable to use whenever a large number of ideas has to be produced or where group membership is largely dispersed or heterogeneous (Coldwell *et al.* , 2004: 59). This data type

was preferred as the population for this research cuts across five provinces and also the group members might be unwilling or unable to communicate freely.

4.6 DATA COLLECTION

Leedy, Ellis and Ormond (2005) indicate that data collection involves the participation of the researcher who poses a series of questions to willing participants; summarizes their responses with percentages, frequency counts or more statistical indexes; and then draws inferences about a particular population from the responses of the sample.

Charlesworth *et al.* (2001) indicate that the data collection method must be chosen under the consideration of the problem being addressed. It must be suitable to the nature of the research, cost and time available to investigate it. However, Charlesworth *et al*. (2001) state that in reality the data collection method chosen is often determined by the researchers overall mind-set or paradigm. This implies that the researcher often chooses methods that one is probably comfortable with or used to. The researcher must be aware of one's frame of reference as it can cause favouritism towards a collection method that does not necessarily address the problem, but it is used because it was done before or forms part of secondary data.

According to Charlesworth *et al*. (2001), it is important to note that no data collection method is exclusive to either the qualitative or quantitative approach. This research will use questionnaire and interview notes. An example of interview questions and a questionnaire are given in Appendix F and G.

Data was collected from the public bodies of the sampled eligible Post Offices and was done in two ways:

- Review of past literature - A detailed review of programme and project documents and reports on PIT framework, for both the sampled participating public bodies and eligible but not sampled
- Interviews - Conducting interviews on selected key personnel of sampled Post offices branches. The branch tellers and staff will be used to collect data and conduct interviews face-to-face. Source records on how the PIT's was utilized were sourced from the Corporate Information Technology Division.

The questionnaire is a better initial method as it minimizes the interviewer effect (disturbance). While the questionnaire will seek to gather sufficient information it should not be too long. Closed-ended questioned will be coupled with open-ended general comments on how to better disseminate information to the shop-floor that could assist in performance measurement and proactive control.

To further improve validity of the study and check deviations between the various branches, external members to the study but within the South African Post office and government would be questioned or interviewed, if necessary.

SAPO's process data will be reviewed for congruence with key success factors and strategy. Quick sourcing and use of information critical for decision making will be reviewed. Ease of data analysis in the database will be investigated. How people actually conduct activities will be compared with the documented procedure.

Structured problem solving procedure will be reviewed for compatibility with knowledge and memory creation and learning from the past without re-inventing the wheel. These procedures and documents will be reviewed as secondary data to check if they are aligned to impacting on business performance and meeting key industry success factors.

To increase validity preliminary evidence will be shared with decision making participant to check if the research has captured or interpreted their input correctly (McNiff, Lomax, P. & Whitehead, 2002).

4.7 BIAS

These ethical procedures were designed to safeguard the participants and minimize bias and other sources of invalidity (Johnson, 2004) that have the potential to be in every study.

4.8 DATA ANALYSIS TECHNIQUE

According to Yin (2003: 109), data analysis consists of examining, categorising, tabulating, testing or otherwise recombining both qualitative and quantitative evidence to address the initial proposition of the study. Data analysis is the process of labelling and breaking down raw data and reconstituting this into themes, patterns and concepts (Mouton, 2001: 108).

The data set was verified against the original questionnaires. A final set of frequencies has been produced to check the data for internal consistency and again

the questionnaires were used to verify discrepancies, completing the process of data cleaning. A combination of both qualitative and quantitative analysis will be used.

Data cleaning and coding will be completed on all questionnaires received and questionnaires will be accordingly coded to ensure quality control. Data capturing will be done using Excel software. However, to ensure quality, the data capturing will be done separate from the data collection process. Quantitative data will be analysed using the SPSS and Strata10 software analysis programs. In this case, descriptive analysis will be conducted and results will be presented as frequency tables and graphs. Analysis of qualitative data will be done using the thematic and content analysis approaches. Key or major themes/issues emanating from responses of key informants are grouped and analysed in a logical manner so as to be able to determine the extent to which these corroborate responses from the detailed questionnaire.

4.9 DELIMITATIONS AND LIMITATIONS

These are as follows:

- Models chosen to reflect and unravel issues might not address the problem fully
- The author might take certain facts for granted without proof and form misaligned opinions
- The small population from which the sample is drawn might skew and exaggerate data analysis. Additional numbers will be sought from other mills

- Participants might not be willing to cooperate resulting in a non-significant sample for statistical analysis and others because of disagreeing with emerging themes from preliminary data
- Participants' responses might be affected by recent events
- Secondary data that will be reviewed might not be verifiable since it was not collected for the purpose of this study
- The researcher's limited experience might limit proper formatting of questions and data analysis to derive the required information
- Key technical skills required in analysis will not be tested for from participants
- Interviews will only be extended to a few participants for further insight if there is a lack of clarity from data collection questionnaires due to their time and expense
- Reviewed documentation data will be limited to the past two years (2009-10)
- Key customer needs are not reviewed from all customers, but only those of the Department of Communication because of them being sponsors of the project
- The study questionnaires will be limited to senior management, branch staff members and community members
- The proposal has already raised interesting questions, but only those dealing with the role of information and communication technology in developing metrics will be tackled

4.10 ETHICAL CONSIDERATIONS

Participation will be voluntary. Where possible, questionnaires will be translated or explained in the vernacular. To prevent bias and hence invalidity, confidentiality will be assured (Johnson, 2004). Participants were promised that they will receive, if requested, results of the study.

While eliciting informed consent for the research, it is critical to follow the UNISA policy on research ethics involving human participants (UNISA, 2007); informed consent is not sufficient to prove that ethical considerations are observed (Janosky, Hughes & Lilford, 2002). Protection of participants' privacy and anonymity is critical to gain their trust and resultant honest responses as a benefit. Respondents must be made aware that the research is valid and will be of value to them and sharing of new knowledge. There should be a fair subject selection without vulnerability or privilege.

4.11 VALIDITY, RELIABILITY, GENERALISABILITY

Of major concern is the threat to internal validity (Zikmund, 2003). The change under investigation is in mid-process and unexpected changes can take place distorting the reliability of the conclusion. One major threat is that the researcher is also affected by the change process. The conclusions derived by the researcher may be subject to personal biases and frustrations. Other validity issues are maturation, testing effects, selection and mortality (Fowler, 2002). The research instrument was not pretested on the study population and, therefore, cannot be deemed to have met the requirements of validity (Gill & Johnsons, 2010).

This research is of a social nature and findings are purely quantitative. These measures are highly subjective and conditional in that a different researcher may come up with a different set of conclusions (Gill & Johnsons, 2010). Threats prevalent to the survey research design are: measurement errors, non-response rate, sampling frame, and reactivity (Coldwell &Herbst, 2004).

Reliability: If the sampling procedure and sample plan clearly defines the sample and the sample size and how the data was sourced, then it would be deemed reliable if someone else doing the same exercise would achieve similar results. As is cited by Lewis (2001: 37) “Basically, reliability is whether you have measured or recorded something accurately, such that if another person repeated the exercise they would obtain the same result.” It is therefore important in looking at this with a critical reflective eye.

Validity is whether the measure or observation actually represents what the researcher thinks it does as is cited by Lewis (2001: 37). Did the research actually measure what was intended to be measured? If it did, then the data integrity would be good and there would be no risk to the conclusions drawn.

- Threats to validity: Poor execution of the data that was being collected resulting in the data that was to be measured not being measured
- Improving validity: Making sure that the intended data that would validate the research is measured and this can be done by getting feedback from others on the data that is intended to be measured to ensure that it answers the

question - “Is the research measuring what it is supposed to measure?” (Christ, 2009).

It is therefore essential that the evidence used to support the argument is acceptable and it should be testable and therefore it is essential that through the whole process of the research survey and data collection, that the evidence is tested, as is cited in Lewis (2001: 36) - “The tests that can be applied to help one decide whether evidence is acceptable” are:

- Is it sufficient?
- Is it authentic?
- Is it valid?
- Is it current?

4.12 PILOT

In any survey, it is customary to pilot the questionnaire with a group of people to ensure there is no ambiguity and misunderstandings regarding questions or statements.

Gill and Johnsons (2010) defined pilot research as a trial run-through to test the research design with a sub-sample of respondents who have characteristics similar to those identifiable in the main sample to be surveyed. Piloting is necessary as it is very difficult to predict how respondents will interpret and react to the questions (Coldwell &Herbst, 2004). Conducting a pilot study before the main survey allows any potential problems into the pro forma of a questionnaire to be identified and

corrected (Gill & Johnsons, 2010). Moreover, Gill and Johnsons (2010) further argue that where an interviewer-administered questionnaire is to be used, piloting provides the opportunity to refine and develop the interviewers social skills and highlight any possible source of interviewer bias.

A group of experts selected from the sample had a test run on questionnaires and a number of issues needing the researcher's attention were highlighted and addressed. These experts were selected from the affected Divisions from carefully selected senior managers with a certain level of research understanding.

4.13 SUMMARY

In this chapter the researcher detailed the research survey design and methodology. This included the target population and choice of sampling method as well as information on respondent briefing where necessary. In the Chapter that follows, the results of the research questionnaire are presented. The author discussed and analysed the responses of the individual questions. The author also provided some insight to the reasons why respondents responded in a particular manner. A summary of the findings and overall interpretation is also included in Chapter 5.

CHAPTER 5: RESULTS AND DISCUSSIONS

5.1 INTRODUCTION

This chapter will outline the results and findings of the study in order to assess the impact the Public Internet Terminals has made in the rural communities. The findings of this study will also be supported by, and be integrated with the literature search of Chapter 3.The responses to the questions in each section of the study are grouped to facilitate the discussion and assist with the linking of the results to the research objectives. The objectives are:

- To identify current perceptions of end users on how they embraced the PITs as technology
- To determine why the PITs are not fully utilised by the citizens
- To determine whether the Public Internet Terminals are operationally efficient and have enough resources, adequate equipment and efficient processes to be operational efficient

5.2 DEMOGRAPHICS

Feedback was received from various Regional offices, and Head Office as initially targeted. Interviews were conducted with SAPO employees consisting of regional staff – that is Branch Staff and Head Office that participate in the PIT model. Interviews were planned for 50 participants and 69 were completed (2 separate interviews were conducted for different divisions at the Head Office). These

interviews are inclusive of the five (5) targeted regions and Head Office department interviews (Refer **Error! Reference source not found.**).

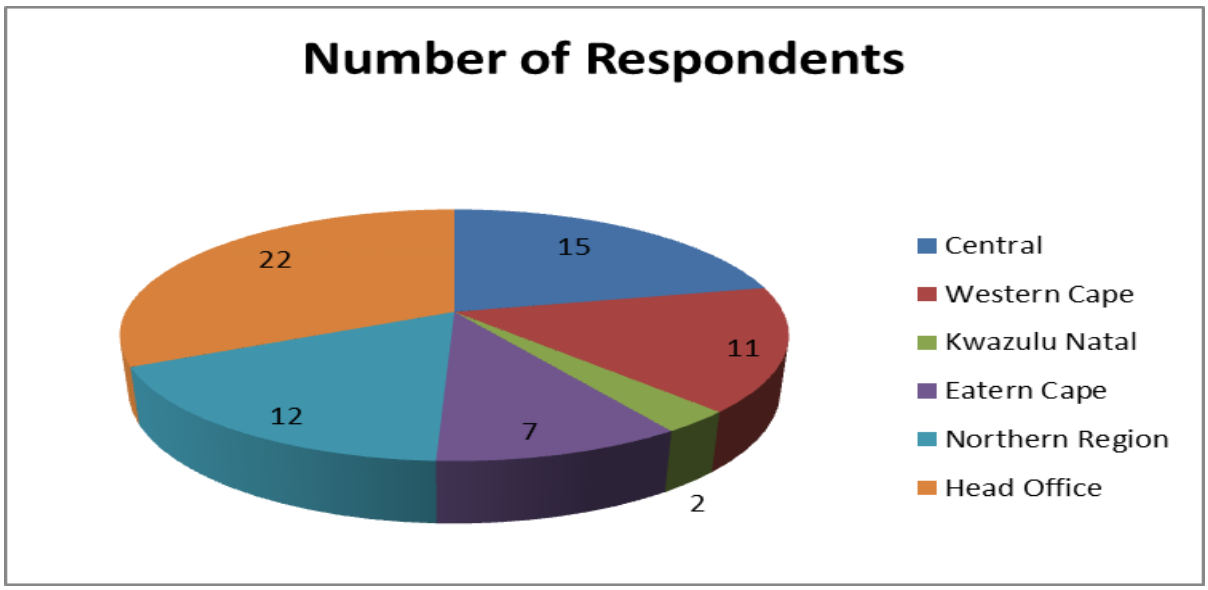

Figure 5.1: Completed interviews per region and Head Office **(Source:** Matsena: 2012**)**

The nature of this study involves technology, innovation, marketing and strategy. A total of 63% of the respondents are in the proximity of the problem area which increases the validity of the sample.

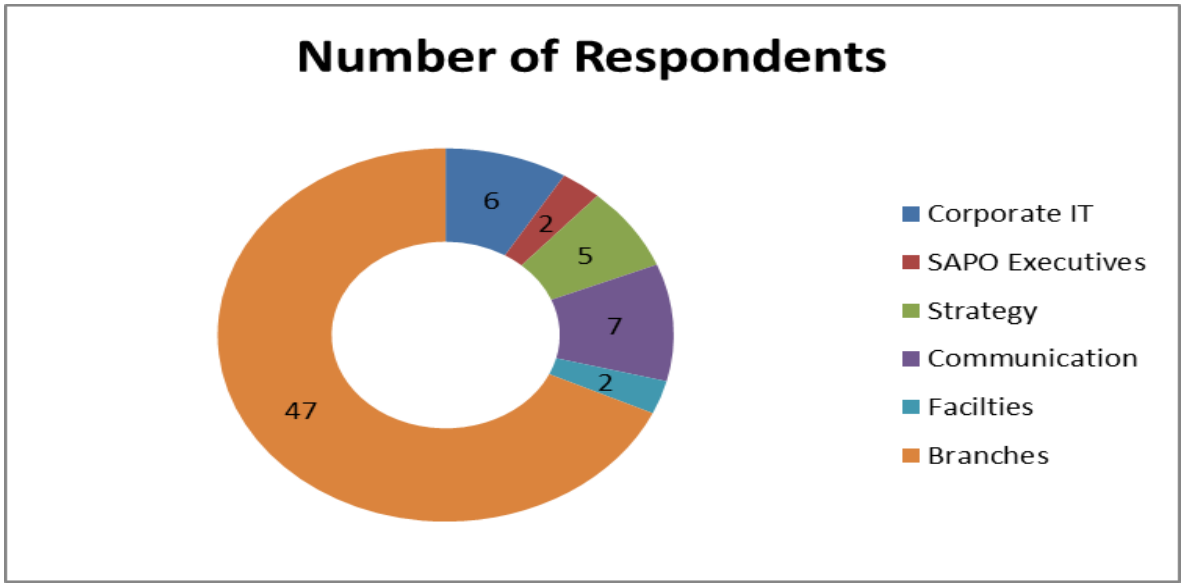

Figure 5.2: Completed interviews per SAPO Divisions **(Source:** Matsena: 2012**)**

The survey was able to cover all sampled respondents and more in different regions within the stipulated time frames and consequently the results can be generalized with confidence. Although there was a non-response in some cases, it was very minimal and steps have been undertaken to rectify that. The non-response rate was so minimal that it will not in any way bias the results achieved.

Interviews were done in all five (5) sampled regions. The figure above depicts the number of officials interviewed in each division. Head Office had the highest number of officials interviewed, followed by Central Region, Northern Region and the Eastern Cape, whilst KZN had the lowest number of officials interviewed.

5.3 END USER PERCEPTION (OBJECTIVE 1)

This objective aims to identify the current perceptions of end users in embracing the PITs as their technology of choice and ascertain whether the programme has achieved its aim of supporting rural communities to accessing government services and opportunities.

Table 5.1: End user perceptions in embracing PITs **(Source:** Matsena: 2012**)**

	Responses	Percentage
Strongly Agree	0	0
Agree	3	6.4
Neither Agree nor Disagree	2	4.3
Disagree	15	31.9
Strongly Disagree	27	57.4
Total Number of respondents	47	100.0

One of the frequently addressed issues concerning accessibility of e-services and information on the Internet is the user's lack of awareness about where the desired information or services are stored on the Web (Santosa 2003). In other words, when visiting a Website, an individual user is presented with a fixed set of choices. Raymond, Giovanni, Christine and Victor (1997:138) indicate that it is only by stepping through the offered choices and conforming to the prescribed organisation of the Web that the user can reach the document he or she desires. This is a navigation problem and therefore requires computer skills and experience (Darken, Allard & Achille, 1999). However, the study indicates that 57.4% of respondents

'strongly disagree' with this notion and 31.9% of the respondents 'disagree' with the statement which reveals that 89.3% of respondents expressing a negative view.

The challenges of the services offered by government are normally standard and not community specific. Needs differ per community - what might be of importance to one community might not be of importance to the other. This might result in communities responding in a despondent manner towards initiatives introduced by government. This supports the debate by Kotler (1999) and Barrett (1996) who argues that to reduce large scale losses, market research is a fundamental aspect of any organisation. Many initiatives fail in the market due to the fact that they do not meet the consumer or community's basic need. Barrett (1996) established that 80% of newly launched initiatives fail to impact the market after two years. This might be the case with the PITs. Management theory shows that these types of market risks can be reduced by applying a diligent plan to market research as a key driver.

What became clear is that deliberate steps are necessary to be taken to make sure that rural communities have access to ICTs. If this is not done, the so-called digital-divide will just widen. On the other hand, Butcher (1998) is centred on education in South Africa as a key developmental activity. He argues that, in South Africa, in order to harness the potential of ICTs, a lot of emphasis has been put on the concept of community centres as a strategy for implementation. This argument can be supported by the various publications on telecentres in Africa, including Benjamin (2000 and 2001). With reference to education, Butcher (1998) states that practical examples of the use of new technologies tend to reinforce the notion of the expanding gap between the rich and the poor, instead of demonstrating practical solutions to the problem. He suggests that more resources should be spent on

opening up access to marginalized communities in innovative and cost-effective ways; otherwise, ICTs serve only to perpetuate greater economic and educational marginalization. He does not give any clear evidence of this which he suggests needs to be researched based on the many 'rhetoric' statements and anecdotal evidence.

In reference to the question of how African countries, in support of their national development objectives can best harness ICTs, Jensen (1998) argues for greater awareness among decision-makers at the highest levels and for the establishment of national ICT forums made up of regulators, operators, service providers and users. He notes the need for clear strategies for subsidizing Internet services, shared access and public access facilities in rural areas, such as telecentres and PITs.

Although Butcher (1998) purported to show that there has been a lot of emphasis on community centres to harness ICTs in South Africa, there are a number of studies that propose telecentres as a method of access to ICTs and as a solution to access difficulties in rural areas and in regions mainly occupied by the poor.

5.4 BEHAVIOURAL CHANGE AND REDUCTION OF POVERTY (OBJECTIVE 2)

This objective aims to determine if the behaviour of public citizens eligible to these services has changed as compared to public citizens who are not eligible.

Table 5.2: Behaviour change to the services **(Source:** Matsena: 2012**)**

	Responses	Percentage
Strongly Agree	0	0
Agree	2	4.2
Neither Agree nor Disagree	1	2.1
Disagree	14	29.2
Strongly Disagree	31	64.6
Total Number of respondents	48	100.0

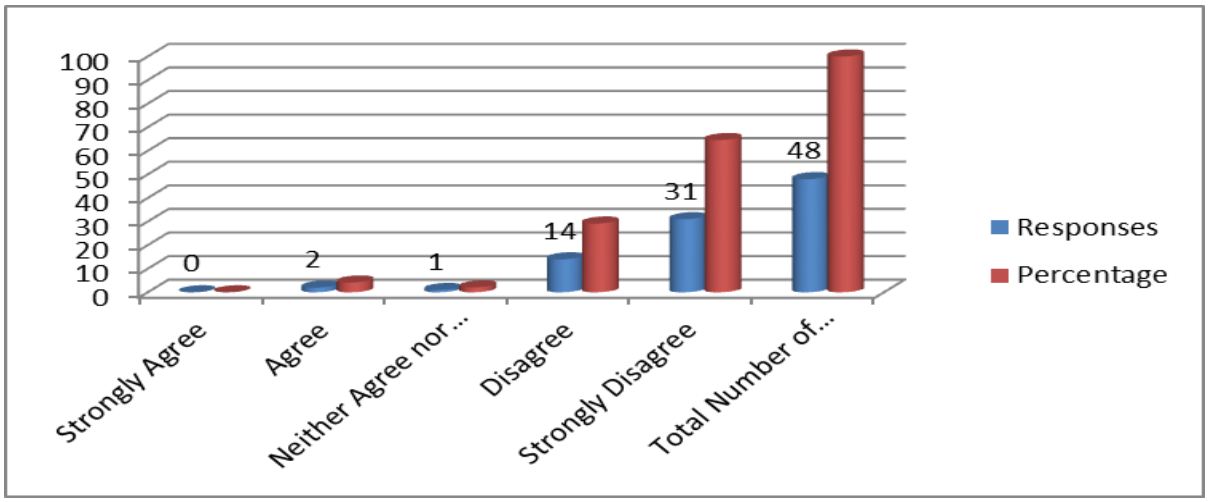

Figure 5.3: Completed interviews per region **(Source:** Matsena: 2012**)**

Figure 5.3 shows the proportion of respondents that accessed the Public Internet Terminals. Overall, the response looks very gloom. Mansell & Wehn (1998) focus on how ICTs can be harnessed for purposes of meeting development goals. They warn that if poor countries implement investment strategies that emulate the 'one person – one telephone – one Internet access point' model that is predominant in the West, frustration will be rife. In addition, they advance the view that there is little to be gained from access to global or local resources if the skills to select, interpret and apply the information are absent or poorly developed through the population. Consequently, they suggest it is important for poor countries to develop models for

'access' and 'information content' because the capacity to generate and share information about local resources is as important as access to distant digital information.

Cecchini and Scott (2003:73) identify three critical elements of poverty reduction efforts, namely opportunity, empowerment and security, and further state that ICT is the vehicle for achieving this poverty reduction. They state that the experiences from rural India show that ICT, through the use of information kiosks, can enhance poor people's opportunities to access government services and other useful information

Braga (1998) builds a case that concludes that the countries that are better positioned to thrive in the new economy are those that can rely on widespread access to communication networks, the existence of an educated labour-force and consumers, and the availability of institutions that promote knowledge creation and dissemination. This may suggest that developing countries are at a disadvantage in comparison to developed countries. Similar sentiments are shared by Mansell & Wehn (1998). Brown (2001) argues that ICTs are simply tools. Significantly, no single tool can solve a global problem such as poverty which has such complex and multiple causes. The author gives examples of where ICTs can play a significant role such as in the creation of jobs and in the reduction of distance. However, the author points out that it would be preferable if the labour-force were educated in this information age.

5.5 OPERATIONAL EFFICIENCY OF PITs (OBJECTIVE 3)

This objective aims to assess whether SAPO as an implementing agent has enough resources, adequate equipment and efficient processes to be operationally efficient.

Table 5.3: Operational efficiency **(Source:** Matsena: 2012**)**

Region	Hardware	Software	Percentage
Central	8	7	25
Western Cape	3	8	9.4
Eastern Cape	7	7	21.9
Kwazulu Natal	2	1	6.3
Northern Region	12	10	37.5
Total Number of respondents	32	33	100.0

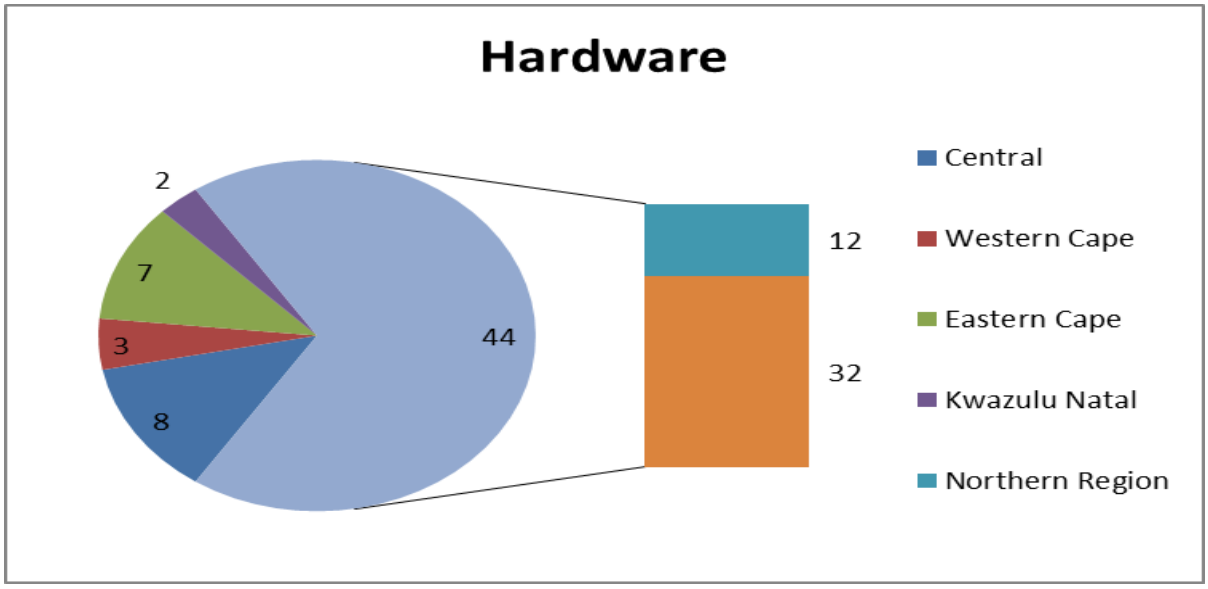

Figure 5. 4 a: Infrastructure challenges (Source: Matsena: 2012)

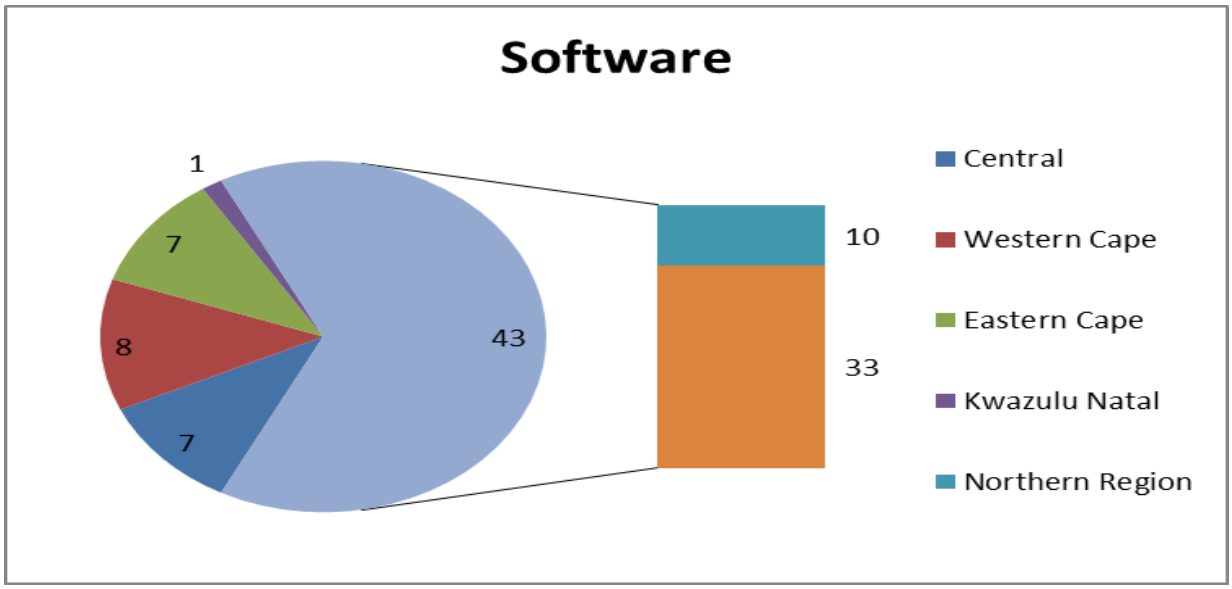

Figure 5. 4 b: Infrastructure challenges (Source: Matsena: 2012)

Hardware

- Aging and falling apart
- End of life cycle
- Spares are difficult to acquire due to import difficulties from abroad

Software

- Incompatible with latest technology
- Identified development bugs not resolved
- Only 50% of source code available
- No Vouchers sold for PIT usage due to no development in the supporting systems

These challenges are related to strategy and question whether the adopted strategy is dynamic enough to support such initiatives. Grant (2005) defined strategy as a unifying theme that gives coherence and direction to the actions and decisions of an individual or organisation. Lack of infrastructure maintenance is a clear indication of lack of direction from SAPO. Grant asserts that formulation of strategy starts with

developing a strategic vision, setting objectives and developing plans to achieve these objectives. This is then followed by the implementation and execution together with the continuous monitoring and evaluation of the organisations progress. A company's strategy thus indicates the choices its managers make about how to attract and please customers. It entails the development of a strategic vision and then is followed by implementation and execution to achieve the objectives.

Some of the general concerns raised by the branches was that the usage of web access to government sites cannot be monitored, the service is hardly available to the customers, and there's a lack of ownership from Consumer services because no benefit are seen in the use of PIT. They also highlighted the fact that there was a lack of documentation, and in some instances there was vandalism to the infrastructure by frustrated users. Also, identified by some of the executives was the lack of government funding which has impacted negatively on this investment.

The contention mentioned in Culture and ICT puts into perspective a major challenge faced by SAPO as an organisation in efforts intended to develop strategies that can bring the information revolution to the continent. In essence, to create truly national, integrated information infrastructures, there has to be the simultaneous acceleration of the use of high-tech and low-tech information services (Wilson: 1996).

Moncrieff (1999) indicated that strategy is partially deliberate and partially unplanned. The planned element comes from two sources: "Emergent strategies" result from the emergence of opportunities and threats in the environment and "Strategies in action" are ad hoc actions by staff throughout the organisation. The

dynamics of the telecoms environment will set focus on the ad-hoc actions, which places additional pressure on management in general. There will now be a requirement to dedicate resources and time to thinking strategically instead of operationally. This implies that every future decision has therefore to be made with some strategic intent, but from one's self-reflective, the decisions are usually made to take care of the most immediate need.

The model proposed by Moncrieff (1999) shows that strategy is planned and emergent, dynamic, and interactive. There is an interaction of five general processes. These are: (1) strategic intention, (2) the organisation's response to emergent environmental issues, (3) the dynamics of the actions of individuals within the organisation, (4) the alignment of action with strategic intent, and (5) strategic learning. The continuous monitoring of these strategic outcomes produces input into strategic learning. This learning comprises feedback into internal processes, the environment, and strategic intentions. Thus the complete system amounts to a mix of feedback loops. The system is self-adjusting only to the extent that the organisation is prepared to learn from the strategic outcomes it creates, that is, continuously learning and strategic thinking are imperative processes. In this model, the distinction between strategy formation and strategy implementation is not existent. In a high technological driven industry where the rate of emerging technology has the potential to quickly invalidate an organisation’s strategic plan, the sequential approach to strategy can be conceived as insufficient. A simultaneous and continuous approach to strategy produces a number of potential benefits. The main benefit is attributed to the fact that there is a definite time-lag between when an opportunity is identified until it is taken advantage of by the organisation, that is, time

elapses from formulation up until implementation. This aspect is very critical in highly dynamic environments like the telecoms industry. Risk reduction is also another factor that arises due to the simultaneous approach. The sequential approach requires committing resources at a very early stage in terms of capital, people and time, whereas the simultaneous approach continually evaluates and dynamically adjusts resource requirements. The simultaneous process also continually adjusts strategies according to the changes in the competitive environment, but can established organisations really adjust their strategic planning procedure to take advantage of this benefit. The high rate of strategic adjustment demands that the industry occupants are able to respond to, and manage change more effectively. This combined strategic model is an effective means of managing the organisations tactics; however, the strategic intent variable and every other type seems to be reliant on each other. This produces a single point of failure if feedback is not received or not received in time. For instance the emergent strategies can possibly take a long time in a large organisation to filter through the structures and teams.

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

This final chapter of the research concludes the study and makes recommendations. The research problem, research questions and investigative questions were re-stated to determine if they were successfully addressed by the research. The author concluded the chapter by making recommendations useful to both the South African Post Office and the Department of Communication when embarking on future technological initiatives. The researcher also elaborated on lessons learnt throughout the research process.

The research problem statement for this dissertation reads as follows:

"*The Public Internet Terminals are currently not enhancing the lives of the communities in the rural areas*."

The Department of Communication blindly introduced this initiative and requested SAPO to implement without sufficient research being done, let alone engaging various stakeholders.

6.2 CONCLUSIONS

A critical aspect of increasing accessibility and utilization of the PIT usage is a better understanding of the group that is eligible to access it and how it is perceived by them. Insights into the reasons why the PIT initiative has not achieved its mandate

by enhancing the lives of the poor have been provided. Had market research been conducted and a strategy supporting this initiative been planned and implemented, the responses to the questionnaire posed would not have been so negative.

As the communities begin to understand the Public Internet Terminals models and how it works, it becomes more desirable to some and even less desirable to some for varying reasons. As the PIT evolves, the Department of Communication needs to remain vigilant and keep in mind different dynamics surrounding this initiative and make it possible for implementing bodies such as the State Owned Entities like SAPO to operate without hindrances by funding challenges.

This survey addresses the questions raised by the client (Government Communication and Information Services) in assessing the effectiveness of the PITs and provides a new and somewhat previous understanding of why this model in some aspect didn't reach its intended goals.

This survey was aimed at addressing 3 dimensions as mentioned in Chapter 5 of the Research findings. All of the aspects were covered through the questionnaire, and as a result, the South African Post Office will be in a better position to redesign or rectify where the PITs did not do well and augment its success factors. Furthermore, recommendations by the communities on how the uptake of the initiative can be enhanced will assist the Department in future engagements and allocation and management of the fund thereof.

This study will enable SAPO as an organisation to understand the perceptions and diverse implementation and challenges experienced by branches in various regions and communities in accessing/utilizing the PITs and as a result an informed solution will be provided

While little work has been done on improving the uptake of the PIT, the survey focused on areas that require change by the Coordinating Department. By focusing on the involvement of management and other untapped elements by allowing , for example, communities to offer solutions to the challenges regarding the PIT, improvements on the uptake of the PIT can surely be noted in future.

Further training and induction will improve the state of the PITs. Continued assessment and analysis of this initiative can also improve the PIT model and provide a platform for authoring new solutions.

By basing the findings directly on feedback from users, lessons from implementing the PIT and utilizing the funds appropriately, the researcher is of the opinion that the conclusions are grounded in a holistic understanding of both the product assessed and the target users. There are many funds disbursed to SOE's for different reasons and simply allocating them will not result in service delivery as envisaged. National Departments must consider the work the officials at SOE's do and the limitations and challenges the fund imposes.

Through the assessments and implications for the PIT outlined here, the researcher believes that the recommendation will be considered to address the challenges experienced by these communities.

Despite the Government Mandate, the return on investment of this initiative is questionable. The South African Post Office has paid support costs of R16 Million over the past 3 years to Unisys for a system that brings no financial benefit for the company and the community at large. The web activity on government sites cannot be monitored as well. By ending the maintenance contract, the South African Post Office can utilise the money to assist in the development of a new solution that is well researched and can indeed bring about positive change to the rural communities.

6.3 RECOMMENDATIONS

It is recommended that:

- SAPO and the Department of Communication gather requirements from all stakeholders
- The South African Post Office should terminate the maintenance contract because no value is seen
- The PIT is to be supported by the National IT Support team while the two entities are in the process to develop a new solution
- Strategy in support of the future PITs to be developed
- There should be continuous maintenance on the PIT infrastructure

BIBLIOGRAPHY

Adam, L. and Wood, F. (1999. 'An Investigation of the Impact of Information and Communication Technologies in Sub-Saharan Africa.' *Journal of Information Science*, 25, no. 4, pp. 307-318.

Academy of Management. *The Academy of Management Review*, Apr 1992; 17, 2; ABI/INFORM Global pg. 327

Access, Processes and People, International and Rural Development Department (IRDD). The University of Reading (UK) http://www.bham.ac.uk/DSA/conf01ofarrell.doc

Achieving and maintaining strategic competitiveness in the * century: The role of strategic leadership; R. Duane Ireland and Michael A. Hitt

Addo-Dankwa, E. 2002 'E-commerce in Ejura: What has a farmer got to do with a computer?' ICT Stories. Mar. 2002. http://www.iicd.org/stories/

Catherine Nyaki Adeya,2002 PhD, ICTs and Poverty

Afolabi, M. 1992. 'The review of related literature in research' *International journal of information and library research*, vol. 4, no. 1, pp. 59-66.

Argyris, C. and Schoon, D. 1996. Organisational Learning 11 : Theory, Method and Practice. Reading MA: Addison-Wesley

A short, practical guide to implementing strategy, Michael K. Allio

Amabile, T.M. 1998. 'A model of creativity and innovation in organisations', *Research in organisational Behaviour*, 10(1):123-167.

Avgerou, C. (2001). 'How Can IT Enable Economic Growth in Developing Countries?' *Information Technology for Development* Vol. 8, pp. 15-28

Bedi, Arjun. S. 1999. 'The Role of Information and Communication Technologies in Economic Development – A Partial Survey. 'ZEF – Discussion Papers on Development Policy No. 7, Centre for Development Research (ZEF), Bonn, May 1999. http://www.zef.de/download/zef_dp7-99.pdf.

Best, M.L. and Maclay, C.M. 2002. "Community Internet Access in Rural Areas: Solving the Economic Sustainability Puzzle." In CID (Center for International Development) (2002) the Global Information Technology Report 2001-2002: Readiness for the Networked World. Oxford: OUP.

Beyond Planning Strategies for Successfully Implementing Strategic Decisions Susan Miller, David Wilson & David Hickson

Bakhru, A. 2010. Analysing the external environment: study guide for MBA B820. Milton Keynes: Open University.

Bass, B. and Avolio, B. 1994. *Improving organizational effectiveness through transformational leadership*. Thousand Oaks. CA. Sage Publications

Botha, D.F. 2000. 'A conceptual framework for the management of knowledge in a knowledge-based enterprise', *South African Journal of Business Management*, 31(4).

Botha, D.F. and Fouche, B. 2002. 'Knowledge management practices in the South African business sector: preliminary findings of a longitudinal study', *South African Journal of Business Management*,33(2).

Botha, D.F. 2004. 'Towards an instrument for surveying knowledge management practices', *South African Journal of Business Management*, 36(1).

Brown, J.S. 1998, 'Seeing differently: a role for pioneering research', *Research Technology Management*, 41(3): 24-33.

Boojihawon, K. and Segal-Horn, S. 2006. *Introduction: What is Strategy? Study guide for MBA B820*. Milton Keynes: Open University.

Boojihawon, K. 2010. *Strategy implementation: Structure, systems, culture and change: study guide for MBA B820*. Milton Keynes: Open University.

Boon, J. A. *et al*. 1994. 'The Information Economy in South Africa: Definition and Measurement.' **Journal of Information Science**, 20, no. 5, pp. 334-347

Brown, M.M. 2001. 'Can ICTs Address the Needs of the Poor?' A Commentary from UNDP, June 2001. http://www.undp.org/dpa/choices/2001/june/j4e.pdf

Burns, T. and Stalker, G. M. 1961. *The management of Innovation.*London: Travistock Publications.

Butcher, N. 1998. 'The Possibilities and Pitfalls of Harnessing ICTs to Accelerate Social Development: A South African Perspective.' *Johannesburg: South African Institute for Distance Education, June 1998.* http://www.saide.org.za/conference/unrisd.htm

Camacho, K. 2001. 'Evaluating the Impact of the Internet in Civil Society Organizations of Central America: a summary of a research framework.' **FundacionAcceso**, January 2001. http://www.acceso.or.cr/publica/telecom/frmwkENG.shtml

Camp, J L. and. Anderson, B. L. 1999. 'Grameen Phone: Empowering the Poor through connectivity.' iMP (information Impacts), December 1999 http://www.cisp.org/imp/december_99/12_99camp.htm

Canning, D. 2000. 'Telecommunications, Information Technology and Economic Development.' *Harvard Institute for International Development, Discussion Paper* No. 53, Jan. 2000. http://www.cid.harvard.edu/caer2/htm/content/papers/confpubs/bns/dp53bn.htm

Castells, M. 1999 'Information Technology, Globalization and Social Development.' Paper prepared for the UNRISD Conference on Information Technology and Social Development, Geneva, Sep. 1999 http://www.unrisd.org/80256B3C005BCCF9/httpNetITFramePDF?ReadForm&parentunid=F270E0C066F3DE7780256B67005B728C&parentdoctype=paper&netitpath=80256B3C005BCCF9/(httpAuxPages)/F270E0C066F3DE7780256B67005B728C/$file/dp114.pdf

Chowdhury, N. 2000a. 'Poverty Alleviation and Information/Communications Technologies.' Dec. 2000. Towards a Motif for the United Nations ICT Task Force http://www.eb2000.org/short_note_19.htm

CID (Center for International Development) (2002) **The Global Information Technology Report 2001-2002: Readiness for the Networked World**. Oxford: OUP. http://www.cid.harvard.edu/cr/gitrr_030202.html

Charlesworth, J., Lawton, A., Lewis, J., Martin, V. & Taylor, P. 2001. *Toolkit 1*: *Study Guide for MBA B736*.Milton-Keynes: Open University.

Charlesworth, J., Lawton, A., Lewis, J., Martin, V. & Taylor, P. 2001. *Toolkit 2*: *Study Guide for MBA B736*.Milton-Keynes: Open University

Chesbrough, H. 1999.' The organisational impact of technological change: A comparative theory of national institutional factors'. *Industrial and Corporate change,* 8 (3): 447-485.

Christensen, C. 1997. 'The innovator's Dilemma'. Boston: *Harvard Business School Press*. Boston.

Christensen, C.M. 2003. 'The Innovator's Dilemma'.*Harper Business Essentials*. New York: NJ.

Christensen, C. and Raynor, M. E. 2003. '*The* Innovator's Solution. Creating and Sustaining Successful Growth', *Harvard Business School Press*. Boston.

Coldwell, D and Herbst, F.J. 2004. *Business Research*. South Africa: Juta& Co Ltd

Cooper, A.C. and Smith, C.G. 1992. *How established firms respond to threatening technologies*. New York: Oxford University Press.

Cooper, C. 1998. 'Information Technology and Developing Countries: A possible Source of Social and Economic Exclusion?' In RAWOO (1998) **Information & Communication Technology and Development: RAWOO Lectures and Seminars**. Netherlands Development Assistance Research Council (RAWOO), The Hague, No. 18, pp. 15-17 http://www.nuffic.nl:3500/rawoo/publicatie_ict.pdf

Crede, A. and Mansell, R. (eds.) 1998 'The Importance of Sustainable Development: ICTs in Developing Countries (Booklet I).' 8/98. http://www.iicd.org/search/show-entry.ap?entryid=2975&part=all

Crede, A. and Mansell, R. 1998. **Knowledge Societies…in a Nutshell: Information Technology for Sustainable Development**. Ottawa: IDRC (with UNCTAD) http://www.idrc.ca/acb/showdetl.cfm?&User (find full URL)

CSIR 1996. 'The Use of Information and Communication Technologies (ICTs) that add value to Development Programmes in Sub-Saharan Africa Sector Review: Employment Report'. Study compiled by Information Services of CSIR for the IDRC. http://www.idrc.ca/acacia/studies/ir-csir.htm

Deane, J. and Opuku-Mensah, A.. 1997. 'Telecommunications Development and the Market: The Promises and the Problems.' **Panos Media Briefing No. 23**, April 1997.http://www.oneworld.org/panos/briefing/telecoms.htm

Delgado, A. *et al.* 2002. 'Internet lessons by Quipunet'. *ICT Stories, Mar. 2002*. http://www.iicd.org/stories/

Derrick, V. L. 1999. 'Inequality: The Greatest Challenge for the New ITs'. Keynote address to 'New IT and Inequality Conference', University of Maryland (USA), Feb. 1999.

d'Orville, H. 2000. 'Information and communications technologies - a rapidly emerging dimension of development co-operation'.UNDP.

Duncombe, R. and Heeks, R. 1999. 'Information, ICTs and Small Enterprise: Findings from Botswana', **IDPM Manchester Working Paper No. 7**, November 1999. http://idpm.man.ac.uk/idpm/diwpf7.htm

Dymond, A. and Oestmann, S. 2002. 'Information and Communication Technologies (ICTs): Poverty Alleviation and Universal Access Policies'. **ATPS Special Paper No. 9**, Nairobi, March 2002

Finnegan, R. *et al*. (eds.) 1987. Information Technology: Social Issues. London: The Open University

Furzey, J. 1996. 'Empowering Socio-Economic Development in Africa Utilizing Information Technology: A Case Study of Ethiopia for the African Information Society Initiative (AISI).' United Nations Economic Commission for Africa (UNECA), Addis Ababa http://www.bellanet.org/partners/aisi/policy/cntry/ethiopia.htm

Global Knowledge Women's Forum: *Transcending the Gender Information Divide. July 2000.* http://www.globalknowledge.org.my/GKII_WomenForum_FinalReport.doc

Gomez, R. and Martinez, J. 2000. 'Internet and Society: New Information and Communication Technologies for Social Development.' *Position Paper for the OAS Summit of the Americas, Preparatory discussion on Connectivity.* Draft, October 18, 2000.http://www.acceso.or.cr/publica/telecom/REFL5-pppp-ENG.shtml

Hasan, H. and Dista, G. 1999. 'The Impact of Culture on the Adoption of IT: An Interpretive Study.' Journal of Global Information Management, 7, no. 1, pp. 5-15

Hamelink, C. J. 1997. 'New Information and Communication Technologies, Social Development and cultural Change.' *Discussion Paper No. 86, UNRISD, June 1997.* http://www.unrisd.org/engindex/publ/list/dp/dp86/toc.htm

Hamelink, C. J. 1999. 'ICTs and Social Development: The Global Policy Context.' *Discussion Paper No. 116, UNRISD, Oct. 1999.* http://www.unrisd.org/engindex/publ/list/dp/dp116/toc.htm

Hawkins, R. J. 2002. 'Ten Lessons for ICT and Education in the Developing World'. In CID (Center for International Development) (2002). ***The Global Information Technology Report 2001-2002: Readiness for the Networked World****. Oxford: OUP, Chapter 4.* http://www.cid.harvard.edu/cr/gitrr_030202.html

Hazan, M. 2002. 'Virtual Souk: E-Commerce for unprivileged artisans'. ICT Stories. Mar. 2002. http://www.iicd.org/stories/

Heeks, R. 1999. 'Information Age Reform of the Public Sector: The Potential and Problems of Information Technology in India'. ***ISPSM Paper No. 6.*** http://www.man.ac.uk/idpm/isps_wp6.khtm

Heeks, R. 1999. 'Information and Communication Technologies, Poverty and Development'. ***Development Informatics Working Paper Series****, Paper No. 5, June 1999, IDPM*, Manchester. http://www.man.ac.uk/idpm/idpm_dp.htm#devinf_wp

Hénault, G. 1996. 'Employment and income generating activities derived from Internet Access'. *An IDRC Study. September 1996.* http://www.idrc.ca/acacia/studies/ir-henlt.htm

Howkins, J. & Valantin, R. 1997. **Development and the Information Age: Four Global Scenarios for the Future of Information and Communication Technology**. Ottawa: IDRC.

Hudson, H. E. 1997. **Global Connections: International Telecommunications Infrastructure and Policy**. New York: Van Norstrand Reinhold http://www.addall.com/Browse/Detail/0471287946.html

Hudson, H. E. 2001. 'The Potential of ICTs for Development: Opportunities and Obstacles'. Telecommunications Management and Policy Program, University of San Francisco.http://www.usfca.edu/fac-staff/hudson/

'ICT Vital in Poverty Eradication Crusade'. http://www.icttanzania.org/ict_vital-_in_poverty_eradication.htm

ILO (2001) World Employment Report 2001: Life at Work in the Information Economy. ILO: Geneva, 2001. http://www.ilo.org/public/english/support/publ/wer/overview.htm

Janczewski, L. 1992. 'Factors of Information Technology Implementation in Under-developed Countries: Examples of West African Nations'. In S. Palvia *et al.* ed. 1992. ***The Global Issues of Information Technology Management***. Hershey PA: Idea Group Publishing, pp. 187-211.

Jensen, M. 1998. 'Toward an African Information Society: Lessons Learned in Harnessing New Information and Communication Technologies (ICTs) for Development in Africa.' In RAWOO (1998) **Information & Communication Technology and Development: RAWOO Lectures and Seminars**. Netherlands Development Assistance Research Council (RAWOO), The Hague, No. 18; pp. 51-58. http://www.nuffic.nl:3500/rawoo/publicatie_ict.pdf

Kahn, M. and Swanborough, R. 1999. 'Information Management, IT & Government Transformation: Innovative Approaches in the New South Africa.' Information Systems for Public Sector Management Working Paper Series, No. 8.http://www.man.ac.uk/idpm/ispswpf8.htm

Kayani, R. and Dymond, A. 1997. 'Options for Rural Telecommunications Development'. World Bank Technical Paper No. 359. http://www.inteleconresearch.com/pages/wbank.html

Kelman, A. (1999) 'Smart Communities on Diminished Budgets: A Strategy for Everyone.' http://www.telepathic.com/smarts

Kenney, G. 1999. 'Communicating for Empowerment in Rural Areas.' Forum on Innovations in Development Communications, Bangalore, India, March 1999. http://www.devmedia.org/documents/ACFF90%2ehtm

Kenny, C. *et al.* 2000. 'ICTs and Poverty'.The World Bank. August 2000 http://www.worldbank.org/poverty/strategies/srcbook/ict0829.pdf

Kenny, C. 2001. 'Information and Communication Technologies and Poverty. '**TechKnowLogia**, July/August 2001. http://www.techknowlogia.org/

Kenny, C. 2002. 'The Costs and Benefits of ICTs for Direct Poverty Alleviation'. *The World Bank. Draft Version. Jan. 2002* http://www.worldbank.org/poverty/strategies/

KPMG 2000. 'The Impact of the New Economy on Poor People and Developing Countries.' Draft Final Report, Department for International Development (DFID), July 2000.

Lok-Dessallien, R. 1999. 'Review of Poverty Concepts and Indicators.' UNDP.http://www.undp.org/poverty/publications/pov_red/Review_of_Poverty_Concepts.pdf

Mansell, R. and When, U. 1998. **Knowledge Societies: Information Technology for Sustainable Development**. Prepared for the United Nations Commission on Science and Technology for Development. Oxford University Press, Oxford http://www.sussex.ac.uk/spru/ink/knowledge.html

Marcelle, G. 2000. 'ICTs & development — Making it happen'. In D. Lush & H. Rushwaya ed. 2000. **Into or Out of the Digital Divide?: Perspectives on ICTs and Development in Southern Africa**. Panos Southern Africa. http://www.panos.org.zm/marcelle.htm

Marker, P. *et al.* 2001. 'The Significance of Information and Communication Technologies for Reducing Poverty'. A DFID study. January 2001. http://www.dfid.gov.uk/Pubs/files/ict_poverty.htm#Summary

McConnell, S. 1999. 'Connecting with the Unconnected: Proposing an Evaluation of the Impacts of the Internet on Unconnected Rural Stakeholders.' http://www.telecommons.com/uploadingimages/jan99-html.htm

Morris, P. 2000. 'A Survey of the Implications of Information and Communication Technologies (ICTs) on Youth Employment'. Paper Prepared for ILO, Nov. 2000

Morales-Gomez, D. and Melesse, M. 1998. 'Utilising Information and Communication Technologies for Development: The Social Dimensions.' **Information Technology for Development** Vol. 8, pps 3-13

Moyo, L. M. 1996. 'Information Technology Strategies for Africa's Survival in the Twenty-first Century: IT All Pervasive.' **Information Technology for Development**, Vol. 7, Iss. 1, pp.17-27

Myers, J. 1998. 'Human Rights and Development: Using Advanced Technology to Promote Human Rights in Sub-Saharan Africa.' **Case Western Reserve Journal of International Law**, 30, no. 2/3, pp.343-371.

Navas-Sabater, J. 2000. 'Use of Telecommunication and Information Technologies in Rural Development.' Village Power Conference, Washington, D.C., November 4, 2000 http://www.rsvp.nrel.gov/vpconference/vp2000/telecom_workshop/telecom_juan_navas_sabater.pdf

Ndiaye, A. *et al*. 1996. 'Empowering Socio-Economic Development in Africa Utilizing Information Technology: A Case Study of Senegal for the African Information Society Initiative (AISI).' *United Nations Economic Commission for Africa (UNECA)* http://www.bellanet.org/partners/aisi/policy/cntry/senegal.html

O'Farrell, C. *et al.* 1999. 'Information and Communication Technologies (ICTs) for Sustainable Livelihoods'. November 1999. http://www.rdg.ac.uk/AcaDepts/ea/AERDD/ICTs.home.htm

O'Farrell, C. 2001. 'Information Flows in Rural and Urban Communities:

Ojedokun, A. A. 1999. 'Distance Education and the New Information and Communications Technologies: An Analysis of Problems Facing a Developing Country.' *The Commonwealth of Learning Forum, March 1999*. http://www.col.org/forum

Opoku-Mensah, A. 1998. "Telecenters Excite Ugandans - But What about the Poor?" Panos-Uganda, August 1998. http://www.oneworld.org/panos/news/3aug98.htm

Opoku-Mensah, A. 1998. 'ICT Initiatives and the Role of Policies in Southern Africa'.' In RAWOO (1998) Information & Communication Technology and Development: RAWOO Lectures and Seminars. Netherlands Development Assistance Research Council (RAWOO), The Hague, No. 18; pp. 70-78. <http://www.nuffic.nl:3500/rawoo/publicatie_ict.pdf

Panos Institute 1998. 'For Richer or Poorer?: The Impact of Telecoms Accounting Rate Reform on Developing Countries.' **Panos Special Briefing 1**, Series No. 3, March 1998. http://www.oneworld.org/panos/briefing/telrates.htm

Perraton, H. 2000. 'Information and Communication Technologies for Education in the South.' *Report prepared for the Department for International Development, June 2000.* http://62.189.42.51/BakcgroundWord/EducationInTheSouthHilaryPerraton.doc

Pigato, M. A. 2001. 'Information and Communication Technology, Poverty, and Development in sub-Saharan Africa and South Asia'. Africa Region Working Paper Series No. 20, August 2001. The World Bank.http://www.worldbank.org/afr/wps/wp20.h

Pitroda, S. 1993. 'Development, Democracy and the Village Telephone'. *Harvard Business Review,* (Nov. /Dec. 1993), pp. 66-79.

Proenza, F.J. 2002. 'e-ForAll: A Poverty Reduction Strategy for the Information Age'. The Communication Initiative.http://www.comminnit.com/st2002/sld-5290.html

Press, L. 1999. 'A Client-Centered Networking Project in Rural India'. On The Internet Jan/Feb. 1999, pp. 36-38.

Pruett, D. & Deane, J. 1998. 'The Internet and Poverty: Real help or real hype?' The Panos Institute, **Panos Media Briefing No. 28**, April 1998. http://www.oneworld.org/panos/briefing/interpov.htm

Qureshi, S. 1998. 'Fostering Civil Associations in Africa through GOVERNET: An Administrative Reform Network'. **Information Technology for Development**, Vol. 8, pp. 121-136.

RAWOO 1998. Information & Communication Technology and Development: RAWOO Lectures and Seminars. Netherlands Development Assistance Research Council (RAWOO), The Hague, No. 18. http://www.nuffic.nl:3500/rawoo/publicatie_ict.pdf

Richardson, D. 1996. 'The Internet and Rural Development: Recommendations for Strategy and Activity.' Sustainable Development Department, Food and Agriculture Organization of the United Nations.http://www.fao.org/waicent/faoinfo/sustdev/Cddirect/CDDO

Richardson, D. 1998. 'Rural Telecommunication Services and Stakeholder Participation: Bridging the Gap between Telecommunication Experts and Communication for

Development Practitioners.' FAO, July 1998. http://www.telecommons.com/document.cfm?documentid=17

Richardson, D. 2000. 'Rural Access: How can Connectivity Contribute to Social and Agricultural Development?' Techknowlogia**,** March 2000. http://www.techknowlogia.org

Richardson, D. and McConnell, S. (2000). 'ENRAP: A Participatory Approach to Developing Local Applications.' http://www.enrap.org/pub_docs/Final_Report.doc?

Samiullah, Y and Rao, S. 2000. 'Role of ICTs in Urban and Rural Poverty Reduction'. *Paper prepared for MoEF-TERI-UNEP Regional Workshop for Asia and Pacific on ICT and Environment, May 2000, Delhi.* http://www.teri.res.in/icteap/present/session4/sami.doc

Saunders, R.J. *et al*. 1994. *Telecommunications and Economic Development*. Baltimore: Johns Hopkins UP

Sathveer, S 2011. The Shape of Emergent Technology in the SA Mobile Telecommunications Sector

Schon, D. A. *et al.* ed 1999. *High Technology and Low-Income Communities: Prospects for the Positive Use of Advanced Information Technology*. Cambridge, MA: MIT Press

Soete, L. 1998. 'Building the Information Society: Implications for the South' In RAWOO (1998) Information & Communication Technology and Development: RAWOO Lectures and Seminars. Netherlands Development Assistance Research Council (RAWOO), The Hague, No. 18, pp. 18-20. http://www.nuffic.nl:3500/rawoo/publicatie_ict.pdf

Stiglitz, J. 1999. 'Scan Globally, Reinvent Locally: Knowledge Infrastructure and the Localization of Knowledge.' *Keynote address, First Global Development Network Conference, December 1999, Bonn, Germany*.http://orion.forumone.com/gdnet/files.fcgi/226GDNfinal.PDF

Telecommons Development Group 2000. 'Grameen Telecom's Village Phone Programme: A Multi-Media Case Study.' Mar. 2000. http://www.telecommons.com/villagephone

Uimonen, P. 1997. 'Internet as a Tool for Social Development'. Paper presented at the annual conference of the Internet Society, INET 97, Kuala Lumpur, June 1997. http://www.unrisd.org/infotech/publicat/inet97.htm

UNDP 2000. 'Overcoming Human Poverty'. *UNDP's Poverty Report 2000*, New York [

UNDP 2001. 'Creating a Development Dynamic'. Final Report of the Digital Opportunity Initiative (DOI), New York, June 2001. http://www.opt-init.org/framework/

USAID 1999. 'Telecommunications Reform to Promote Efficiency and Private Sector Participation: The Cases of El Salvador and Guatemala'. ***Economist Working Paper 10**, June 1999.*

Werner, M. 1996. 'Empowering Socio-Economic Development in Africa Utilizing Information Technology: A Case Study of Mozambique for the African Information Society Initiative (AISI)'. United Nations Economic Commission for Africa (UNECA), Addis Ababa. **http://www.bellanet.org/partners/aisi/policy/cntry/mozambiq.html**

Wresch, W. 1996. *Disconnected: Haves and Have-Nots in the Information Age*. New Brunswick: Rutgers University Press

APPENDIX

EVALUATION OF THE PUBLIC INTERNET TERMINALS

My name is ……. from the South African Post Office. We are conducting an evaluation study on behalf of The South African Post Office Corporate Information Technology. The aim of the study is to determine the effectiveness of the Public Internet Terminals. I would like to ask you a few questions regarding your experience in using the Public Internet Terminals. The interview will take approximately 30 minutes. The questionnaires should be returned to the researcher by 31st March 2012. For any enquiries kindly contact the researcher on 0833813498/0126497346 or email all your queries to the following email address: Portia.Matsena@postoffice.co.za.

Thanking you in advance for participating in this study

Purpose of the questionnaire

Anonymity and Confidentiality
The information used from this questionnaire will be used by the researcher to complete her Masters in Business Administration research dissertation. Your anonymity is assured and your feedback will be used for the purpose of the study and nothing else. The results will not be made available to your supervisors or manages. The results are confidential to the UNISA School of Business Leadership and the Researcher.

Completion of the Questionnaire
The questionnaire comprises 25 questions. It should take you approximately 20 minutes to complete if not less. Except for the first question where you have to indicate the department where you work by crossing one of the options, for the rest of the statements please cross one of the options to indicate how you feel.

Please indicate the division where you work by crossing one of the options below:	
SAPO Executive	
SAPO Corporate IT	
SAPO Branch Staff	
SAPO Communications	
Non SAPO Employee	

SAPO Clients – Assessment of ICT usage and benefits derived from PITs

Questions	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
1. The PIT process is well known	1	2	3	4	5
2. Government services are easily accessible through PITs	1	2	3	4	5
3. PIT are a cheaper form of communicating with government	1	2	3	4	5
4. I am able to operate a computer without assistance	1	2	3	4	5
5. The support provided Branch staff is commendable	1	2	3	4	5
6. Feedback from government is faster than visiting the various departments	1	2	3	4	5
7. The usage of the PITs has increased my chances of finding employment	1	2	3	4	5
8. The PITs are easily accessible, connection is faster	1	2	3	4	5
9. I would rather use PITs situated in the Post offices than use the internet kiosks	1	2	3	4	5
10. PITs are value for money	1	2	3	4	5

Process and Performance Management

Questions	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
11. SAPO has made it easy for me to offer PIT as a service to our customers	1	2	3	4	5
12. There are mechanisms in place to support any shortcoming related to the PITs	1	2	3	4	5

13. Training is provided by SAPO on PITs	1	2	3	4	5
14. PITS are a waste of time and government should scrap the idea	1	2	3	4	5
15. I prioritise SAPO related matters than PITs	1	2	3	4	5
16. PITs are of no benefit to the community as none of them has reported any positive feedback from the usage	1	2	3	4	5
17. Most PITs users are computer literate and can operate PITs without assistance from SAPO staff	1	2	3	4	5
18. I know and understand the PIT vision and how it fits into the overall Post office Strategy	1	2	3	4	5
19. The relationship between the Post office and Department of Communication is known to me	1	2	3	4	5

Stakeholder and Relationship Management

Questions	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
20. The Department of Communication is actively involved in ensuring the success of PITs	1	2	3	4	5
21. Funding is available to support the running of the PITs	1	2	3	4	5
22. Frequent feedback is given to the strategic partner i.e. DOC	1	2	3	4	5
23. Future roll out of PIT is envisaged to other Post office branches	1	2	3	4	5
24. The support provided by the Department of Communication is					

adequate	1	2	3	4	5
25. SAPO is benefitting from this product	1	2	3	4	5