The state of e-government in Swaziland with special reference to government ministries and departments

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DECLARATION

I, Bonginkosi Mfundza Ginindza declare that

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(ii)   This dissertation has not been submitted for any degree or examination at any other university.

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Abstract

This research assessed the state of e-government in Swaziland with special reference to government ministries and departments. The goal was to establish the extent to which the Swaziland Government has responded to the challenges and the progress made regarding the priority initiatives pertaining to e-government in the country as outlined in the work of Oyomno and Ramatlhape (2004: 45). To provide an accurate picture of e-government in the country was not an easy task due to the absence of empirical studies conducted on e-government in Swaziland. The study used the survey research strategy. The population of the study was the government ministries and departments which made 23 units of analysis. The techniques for data collection were an interview schedule, an administered questionnaire and a website evaluation form. The data was then analyzed using SPSS version 15.0 for Windows for statistical processing. The research established that the country has developed an appropriate ICT policy. This policy promises a favourable climate that would enhance the development and implementation of e-government in Swaziland. The research also disclosed that the country enjoys the requisite political will necessary to see e-government through.

The research further revealed that the country has already embarked on a number of e-government initiatives. These initiatives include information services (government organisation and structures, directory information, access to information, and policy documents and reports). Information services are normally the first category of e-government components. The process began with the establishment of a government website to which different categories of government information are posted. The government website is basically static in that content is seldom updated and it is not citizen-centric. Swaziland's e-government index stands at 0.3454, bringing the country to position 125 when rated against countries of the world in terms of e-government development and implementation. This state of affairs means the country's e-government is still at the infancy stage of development in terms of the United Nations and American Society for Public Administration (ASPA) (2002: 2) model of e-government. Apart from the information services, there are initiatives instituted by the Swaziland Government that include "special initiatives" aimed at closing the digital divide. Lastly, recommendations based on the findings of the study have been made.

In conclusion the research noted that e-government in Swaziland has chances of proper development and implementation. This however, will only be possible if the ICT policy and the recommendations based on the findings of the study are put to good use by the relevant stakeholders. The development of an e-government policy, e-government strategy, e-government programme and attending to broadband issues in the country are matters of priority.

Acknowledgements

Dedication

For Rev Oreah M. Ginindza and my late Mom Kate, S. Chiya

".....grateful to God for giving me such wonderful and caring parents like you".

Table of Contents

Chapter Three   **Research methodology**

Chapter Four   **Presentation of results**

Chapter Five   **Discussion and interpretation of results**

Chapter Six   Summary of findings, conclusions and recommendations

List of figures

List of tables

List of appendices

List of abbreviations and acronyms

ASPA	American Society for Public Administration
CRS	Criminal Record System
CSD	Computer Services Department
CTA	Central Transport Administration
DBSA	Development Bank of Southern Africa
DNS	Domain Name Service
DPM	Deputy Prime Minister
DPSA	Department of Public Service and Administration
DSL	Digital Subscriber Line
E-Government	Electronic Government
ICT	Information Communication Technology
ISDN	Integrated Services Digital Network
LAN	Local Area Network
MTN	Mobile Telephone Network
PSMP	Public Sector Management Programme
SADC	Southern African Development Community
SBIS	Swaziland Broadcasting and Information Services
SPTC	Swaziland Post and Telecommunication Corporation
UK	United Kingdom

UKZN   University of KwaZulu-Natal

USA   United States of America

VSAT   Very Small Aperture Terminal

VSE   Voice Service Equipment

WAN   Wide Area Network

Chapter one

Introduction to the study

1.0 Introduction

The advent of information communication technologies (ICTs) has led to the development of electronic services (e-services) including electronic government (e-government). ICTs as noted by Adesida (2001: 8) are changing lives in ways we could hardly have imagined less than two decades ago. The convergence of computers, telephony, and communications is changing the way we live and work, and is transforming many aspects of social and economic organisations. According to Adesida (2001: 8) not only are ICTs affecting the way we do business, they have led to the creation of entirely new industries such as software, e-commerce, and e-government. The United Nations (2008: 2) noted that innovations on ICTs have also provided an opportunity for effective working modalities across government agencies. Lam (2005) attests to this when stating the numerous benefits for e-government. These benefits include greater efficiency, broader access to government services, improved levels of service, government reform, greater transparency, reduction of corruption and citizen empowerment. The United Nations (2008: 2) concur when noting that e-government is being deployed not only to provide citizen services but also for public sector efficiency purposes, improving transparency and accountability in government functions and allowing for cost savings in government administration. However, the scenario as observed by UNESCO (2005) shows vast differences between developing nations struggling to get a foothold in the ICT revolution and those developed nations where the efforts of e-government have already started bearing fruit. Regarding an end to corruption, the Working group on e-government in the developing world (2002: 11) noted that e-government does not guarantee an end to corruption. The Working Group on e-government in the developing world (2002: 11) lamented that officials who master technology-empowered processes can find new opportunities for corruption. Under such circumstances, e-government may simply cause an inter-generational shift in corruption towards the younger and more tech-literate officials.

ICTs have become enablers of change. Adesida (2001: 8) argued that ICTs on their own do not create transformation but they are best seen as facilitators of change, innovation and

creativity. As organisations become more mature and more complex, the United Nations (2008: 2) advised that the role of ICTs needs to evolve to enable inter-organizational linkages and, with it, the need for e-government co-ordination. As such, ICT should be viewed as a key tool to bring about a change in service delivery approaches. Although the implementation of e-government programmes involves the use of many ICT applications, the United Nations (2002: 1) noted that it is the Internet that is the most widely recognized and identifiable component driving e-government. Ngulube (2007: 2) commented on this when saying, although e-government is often defined as online government or Internet government, many non-Internet electronic government technologies such a telephone, fax, short message services (SMS), multimedia messaging services (MMS), wireless networks, Bluetooth, television and radio-based delivery of government services can be used in the context of e-government.

The impetus for thinking about online dimensions to public sector operations as observed by the United Nations (2008: 69) came during the 1990s when the mainstream advent of the Internet began to translate into dramatic declines in the cost of both communicating and processing information. The origins of e-government, as stated by the United Nations (2008: 70), are intimately interwoven with the mainstream advent of the Internet as a platform for new ways of organizing on the one hand, and new models and channels of service delivery on the other hand. In 2001, as stated by the United Nations (2002: 45), there was a moderate expansion of the Internet in Africa: "For the first time, all countries and territories are now online, and the number of dial up Internet subscribers grew by approximately 15 percent over the one million recorded in 2000" (United Nations 2002: 45). Internet users in Africa as reflected in the Internet world stats (2008) are estimated to be 51 065 630 which signifies 5.3 percent Internet penetration on the continent and 3.5 percent of the whole world. From the year 2000 to 2007 Internet user growth in Africa increased by 882.7 percent. Most of this development as alluded to by the United Nations (2002: 45) is happening in the major cities, and consequently is not reaching the majority of Africa's population. The pursuit of e-government has not been homogenous by any stretch. Universal Internet access remains a major challenge. While e-government has resulted in efficiency gains in some instances, the United Nations (2008:69) observed that cost savings have been sporadic, uneven and often overshadowed by both upfront and escalating investments often required in order to create and maintain new electronic capacities.

Most governments around the world as noted by the United Nations (2008: 2) started their e-government initiatives with a focus on providing information and services to the citizen while service delivery platforms remained separate and parallel across various government agencies. In this model as the United Nations (2008: 2) observed service delivery was built around individual agency functions, structures, information, systems and capabilities. With the private sector leading the way, advances in accessibility and a greater use of technology have allowed an expansion of innovative ICT solutions. Citizens and businesses around the world as hinted by the United Nations (2008: 2) are increasingly demanding that their governments follow suit. Citizen groups have come to expect a 24/7 convenient user interface with ease of use, in a language the user understands and which is tailored to individual needs.

> At the government's end, with more services online has come the realization that continued expansion and improvement of online services is not possible without the integration of government systems (United Nations 2008: 2).

Recent evidence as reflected by the United Nations (2008: 2) shows that in many developed countries, where most services are already online, citizens and businesses prefer to have both traditional and non-traditional channels of delivery at their disposal, depending on where and when they wish to access services and on the nature and type of service required.

Lam (2005) observed that numerous studies in the literature have provided evidence to suggest that most governments in the world are far from an advanced stage of e-government maturity. While progress in e-government has been made in many countries, the evidence suggests the stark reality that much of e-government remains at an informational or "early" transactional stage. Several scholars such as Ngulube (2007: 5) have indicated that efforts to progress towards a more advanced stage of e-government maturity are hampered by numerous challenges. In this regard, Ngulube (2007: 5) noted seventeen challenges and opportunities of e-government implementation as reflected in the works of other scholars in Sub-Saharan Africa. These are infrastructure development, law and public policy, digital divide, e-literacy, accountability, trust, privacy, security, transparency, interoperability, records management, permanent availability and preservation, education and marketing, public sector and private sector partnerships, workforce issues, cost structures and benchmarking. A study by Lam (2005) also disclosed seventeen barriers to e-government

maturity. Oyomno and Ramatlhape (2004: 45) concur when noting the challenges to be met in order for all citizens to realise the beneficial opportunities of e-government in Swaziland regardless of their geographical location.

The United Nations (2008: 10) noted that although governments share common challenges, they start from different stages in terms of e-government and administrative development suited to their own needs and within the parameters of their own stated developmental objectives. For most developing countries, which are still in their infancy in terms of ICT services roll-out, the United Nations (2008: 10) observed the importance for policy makers to think of a multiple channel service delivery approach to government services through both electronic delivery and non-electronic media. Online services must not be thought of as a substitute for non-electronic media in countries where large numbers of citizens may be without access. Previous United Nations e-government readiness surveys as stated by the United Nations (2008: 10) have noted that any ICT led strategy needs to take into account the level of development, access to infrastructure and the skill level in the country. Therefore, connected governance initiatives need to be placed within the context of the e-development goals of national governments. The Working group on e-government in the developing world (2002: 3) noted that there are no "one size fits all" e-government solutions. Each country has a unique combination of circumstances, priorities and resources.

The promise and the excitement of connected government as reflected by the United Nations (2008: 10) should not obscure a key promise, for example, the end-goal of all e-government and connected governance efforts must remain better public service delivery. Improvement in the quality of governance and the responsiveness and effectiveness of government should serve to empower the citizen. Therefore, citizens must be given the chance to play a role in influencing these e-government solutions.

There are various models that are used to depict e-government as alluded to by the United Nations (2002: 11). These models suggest a number of distinct phases in the development of e-government. However, the most used model is the United Nations and American Society for Public Administration (ASPA) (2002: 2) which is described in detail under the theoretical framework. It is against this background that this study sought to assess the state of e-government in Swaziland with special reference to government ministries and departments.

The goal was to establish the extent to which the Swaziland Government has responded to the challenges and the progress made regarding the potential priority initiatives pertaining to e-government in the country as outlined in the work of Oyomno and Ramatlhape (2004: 45). Oyomno and Ramatlhape (2004) examined the capability of the Government of Swaziland to exploit the opportunities and address the challenges of the expanding concept of e-government.

This dissertation is organised into six chapters. Chapter one presents background to and outline of the research problem, definition of the key terms relevant to the study, theoretical framework which outlines the assessment framework and model for the study, justification of the study, the problem statement as well as the research questions asked in the study, and the delimitation of the study. Chapter two discusses each of the following topics as they relate to e-government: policy issues, national ICT policy, the importance of technology for e-government, the implications of e-government for financial and other related costs, approaches to e-government development, challenges and threats to e-government, critical success factors for e-government, measures of success/failures of e-government and monitoring evaluation of e-government programmes. This chapter also presents a summary of the literature that gives a general overview of e-government in the world, the situation in Africa, and the view from Swaziland. Chapter three describes the research approach and data collection method including the instruments used in the study. This chapter also discusses the matters of reliability and validity of the instruments used. Chapter four presents the results of the survey. Chapter five presents the discussion and interpretation of the results. This chapter also integrates the results in Chapter four with the information in Chapters one and two. Chapter six concludes the study, and presents recommendations that are adding to the growing body of knowledge on e-government in Swaziland and a suggestion for further research. This chapter demonstrates that the study has fulfilled its objective and answered the research question: What is the state of e-government in Swaziland?

1.1 The problem statement

The problem statement for the research was whether a developing country like Swaziland is making significant progress in the development and implementation of e-services in ways that would lead to the realization of the full promise of e-government in the country. The

broader issues that the study investigated related to the challenges that needed to be met in order to realise the beneficial opportunities of e-government in the country. These included: developing an appropriate ICT policy that enables e-government in ways that address the expansion of ICT applications (information services) in government, promoting a better life characterised by representative and participatory democracy, transparent, open and collaborative decision making, close relation between government, business, and citizens, enhanced service delivery, new infrastructure, information structure (info-structure), integrated and seamless government services that cut across departmental boundaries providing a convenient and timely service to the citizens, and equity in the provision of government services.

The United Nations (2002: 53) noted a growing concern that e-government can exacerbate the digital divide and further marginalize those without access to ICTs. This scenario has been attributed to inappropriate ICT policies and misdirected priority initiatives. Backus (2001: 21) stated that before embarking on any e-service project, a commonly accepted vision is required. The goal that should be achieved with e-government implementation should be clearly stated. The focus point that should be taken has to be considerate of customer satisfaction, internal efficiency, and increased democracy.

Oyomno and Ramatlhape (2004: 46) noted that an ICT policy is an essential instrument to effectively manage the complexity of the emergent e-government environment. Lam (2005) concurred when saying that the absence of a detailed e-government policy, or premature stage of development, had a decelerating effect on e-government initiatives: "Until such e-government policy had been fully conceived, government agencies would be hesitant to speed ahead with the development of new e-government applications and technology" (Lam 2005).

Information services are normally the first category of e-government applications. The process begins with the establishment of a government website to which different categories of government information are posted. Previously, there were no empirical studies that were conducted on the extent to which the Swaziland Government has responded to these challenges and the progress made regarding the potential priority initiatives stated in Oyomno and Ramatlhape (2004: 45) which would determine the success or failure of the development

and implementation of e-government in the country, thus the need to investigate the state of e-government in Swaziland.

1.2 Research questions asked

The above problem led to the following research questions:

1. What are the policies regarding e-government in Swaziland?
2. How appropriate are the e-government policies in Swaziland?
3. What are the senior government officials' perceptions of the state of e-government in Swaziland?
4. What initiatives have already been launched regarding e-government in Swaziland?
5. What is the content and maturation level of the different aspects of the Swaziland Government website?
6. What recommendations can be made based on the findings of the study?

1.3 Justification of the study

The study recognised that e-government is an essential element in development, and offers the potential to bring citizens closer to their governments, regardless of the type of political system that a country has. West (2007: 8) noted that the benefits from interactive features that facilitate communication between citizens and government, for example, electronic mail (email) allow ordinary citizens to pose questions to government officials or request information or service. Adesida (2001: 10) attests to this when saying citizens can be invited to send in comments and their views to government officials or parliamentarians. By so doing, their views can be taken into account before laws are passed and policies made. This should have the effect of making government more transparent, accessible, and accountable to its constituents and will likely reduce public cynicism about the political process. According to Adesida (2001: 12) the dynamic interactions of ideas and ICTs open up new frontiers on how to improve democracy. In Africa key needs include building the capacity of those that have been left out of developmental initiatives (especially, women, youth and minorities), strengthening transparency and accountability, and decentralisation of government functions to local and regional levels. Adesida (2001: 12) argued that all over

the world, women represent a very small percentage of elected and appointed government officials. This scenario, in addition to corruption and the lack of transparency and accountability, poses a major challenge to the deepening of the democratic process in Africa. Oyomno and Ramatlhape (2004: 45) identified challenges that need to be met in order to realise the beneficial opportunities of e-government in Swaziland. These challenges included developing an ICT policy, developing an inclusive ICT infrastructure, creating a trusted and enabling institutional environment, providing an empowered political and administrative leadership, legal framework, architecture and standards, information and knowledge management, research and development, security and risk management.

Oyomno and Ramatlhape (2004: 45) further highlighted some potential priority initiatives for the development and implementation of e-government in the country, namely: information services (government organisation and structures, directory information, access to information, and policy documents and reports), electronic administration, call centre services, Tinkhundla[1] access portals, and the development of e-government strategy. Previously, there was no information on how the Government of Swaziland is tackling these challenges. Various scholars such as Lam (2005) have noted that the success or failure of any e-government project in any country in the world has a huge bearing on such challenges, including wrong priorities. Therefore, there was a dire need to assess the extent to which the Government of Swaziland has responded to these challenges, and examine how the potential priority initiatives were being implemented in the country. This study serves as an input to the growing body of knowledge on e-government in Swaziland and also acts as a spring board for further research that could translate into enhanced development and the implementation of e-services that would reach the maturity stage. This stage involves delivery of services and information electronically, to business and citizens, 24 hours a day, seven days a week, 365 days a year, thus reducing long queues in public offices in the country concerned.

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[1] Tinkhundla: constituencies established for purposes of political organisation and popular representation of the people in parliament.

1.4 Definition of terms

- **Back office functions**

The United Nations (2008: 126) defines back office functions as those areas that support front line delivery of services. It includes finance, human resources, information technology, administrative support, legal services, facilities management, travel services, marketing and communication.

- **Digital divide**

Mutula (2005) defines the digital divide as the inequalities in access to and utilisation of ICTs.

- **E-government**

Heeks (2002) cited in Mutula (2005) and UNESCO (2005) define e-government as the use of ICTs to improve the activities of public sector organisation. It allows government departments to network and integrate their services and enhance the relationship between the government and the public. In a number of instances this term has been confused with e-governance. Yet, e-governance is about the use of information technology to raise the quality of services governments deliver to citizens and businesses. Misuraca (2006) noted that e-governance is generally considered as a wider concept than e-government since it can bring about a change in how citizens relate to governments and to each other. It is also about moving beyond passive information-giving to active citizen involvement in the decision-making process.

- **E-government strategy**

An e-government strategy as defined by Heeks (2006: 147) is a plan for e-government systems and their supporting infrastructure which maximizes the ability of management to achieve organizational objectives.

- **E-government programme**

According to the United States Department of Agriculture (USDA) (2004: 2) an e-government programme is a detailed step by step guideline for an agency to follow in order to understand and make prudent decisions and implement a secure architecture for online

applications. This programme normally covers authentication, application permissions, authorisation, application integration, hosting and registration procedures that will ensure the integrity of confidential information being transferred over the web. It is worth noting though that there is a thin dividing line between an e-government programme and an e-government strategy. From the literature, some countries relied on their detailed e-government strategy to the total neglect of an e-government programme. Therefore, utilization of a strategy or programme depends on the route a particular country has chosen to follow.

- **E-information**

The United Nations (2008: 18) describes e-information as the situation in which a government website offers information on the list of elected officials, government structures, policies and programmes, points of contact, budget, laws and regulations and other information of public interest. Information is disseminated through a number of online tools such as community networks, blogs, web forums, text messages (micro democracy), newsgroups and email lists.

- **E-consultation**

In this aspect as stated by the United Nations (2008: 18) the government website provides the tools necessary for electronic consultation. It allows citizens to set the agenda for the debate through electronic petitioning. The government ensures that its elected officials have a website to communicate directly with their constituents, maintain an archive of their discussions, and provide feedback to citizens.

- **E-decision making**

The government in this regard as reflected by the United Nations (2008: 18) is willing to take into account the electronic inputs (e-inputs) of citizens into the decision-making process. The government informs its citizens on what decisions have been taken based on the consultation process.

1.5 Theoretical framework

This study was informed by the widely used United Nations and American Society for Public Administration (ASPA) (2002: 2) model of e-government supported by the UNESCO (2005)

e-government toolkit, specifically its e-readiness assessment framework that guides ICT policy formulation for developing countries.

1.5.1 Models of e-government

Heeks and Bailur (2007) observed that a reasonable amount of literature on e-government research states that e-government research can either be informed by theory-based work, framework-based work, model-based work, schema-based work, concept-based work, category-based work or non-framed work. In all these, Heeks and Bailur (2007) noted that the model-based paradigm has dominated the theoretical framework used in e-government research. Various models of e-government implementation have been advanced in the literature. Affisco and Soliman (2006) outlined models proposed by Lay and Lee (2001), Balutis (2001a), the Gartner Group as presented in Baum and DiMaio (2001) and the United Nations and ASPA (2002: 2).

These models as stated by Backus (2001: 4) provide a useful tool to evaluate the development of e-government in a given context. As noted earlier, the present study selected the United Nations and ASPA (2002: 2) model to form the bases of the theoretical framework because it is the most used model in e-government research and was found to be appropriate for the Swaziland context. Affisco and Soliman (2006) noted that the United Nations and ASPA (2002: 2) model has proven to be very useful in benchmarking government websites at national level. According to Yildiz (2007) this model of e-government was first introduced in a study conducted by the United Nations and ASPA and yielded wonderful results. It was upon this premise that the United Nations and ASPA (2002: 2) model would assist in answering the research question of the study, particularly questions three and four, about the initiatives already launched regarding e-government, and the content and maturing level of the different aspects of the government website. This model suggests five distinct phases in the development of e-government and these are discussed below:

- Stage one, also referred to as the emerging presence of the development of e-government, is characterised by limited Internet presence and the information is static and basic with one way interface between citizens and the government.

11

- The second stage, also referred to as the enhanced presence, is characterised by the dynamic and enhanced online information that is made available to the citizens, but communication is still one way. Internet portals are designed to integrate government activities and processes to facilitate online interaction between the citizens, business and other stakeholders. A country's presence on the Internet expands dramatically with access to a wide range of government institutions and services.

- The third stage, also referred to as the interactive presence, provides more interactive interfaces between all stakeholders. At this stage, e-government integrates the complete range of government services, and provides a path to them that is based on need and function, not on department or agency. For example, citizens may be able to register a birth or death, apply for a social welfare grant, pay taxes, access government legislation and information on activities of their representatives in parliament and local government without having to leave their homes and offices.

- The fourth stage, also called the transactional presence, offers more customised and secure services as there is provision for passwords and other security features. These services include transactions like obtaining visas, passports, birth, and death records, licenses, permits where a user can actually pay online for a service, pay parking fines, automobile registration fees, utility bills and taxes. All the stakeholders begin to realise the benefits of e-government such as fostering democratic processes, promoting accountability, increasing citizen participation and engagement and delivering of efficient and effective government services.

- The fifth stage, also called seamless or fully integrated, provides the capacity to instantly access any service in a "unified package". Ministerial/departmental/ agency lines of demarcation are removed in cyberspace. Services will be clustered along common needs. According to the United Nations (2002: 14) no country has reached this stage.

The first four stages of the United Nations and ASPA model seem to provide the fundamental features of the evolution of e-government in varying details and complexity. Table 1a and Figure 1 depict the United Nations and ASPA e-government model.

Table 1a   **United Nations and ASPA model of e-government**

Stage	Orientation	Services	Technology	Citizens
Stage 1: Emerging Web presence	Administrative	Few, if any	Only Web	Going it alone
Stage 2: Enhanced Web presence	Administrative, information	Few forms, no transactions	Web, email	Links to local agencies
Stage 3: Interactive Web presence	Information, users, administrative	Number of forms, online submissions	Web, email, portal	Some links to state and federal sites
Stage 4: Transactional Web presence	Information, users	Many forms and transactions	Web, email, digital signatures, PKI, portals, SSL	Some links to state and federal sites
Stage 5: Connected/seamless Web presence	Users	Mirror all services provided in person, by mail and by telephone	Web, email, PKI, digital signatures, portal, SSL; other available technologies	Crosses departments and layers of government

Source: United Nations (2002)

Figure 1   **United Nations e-government model**
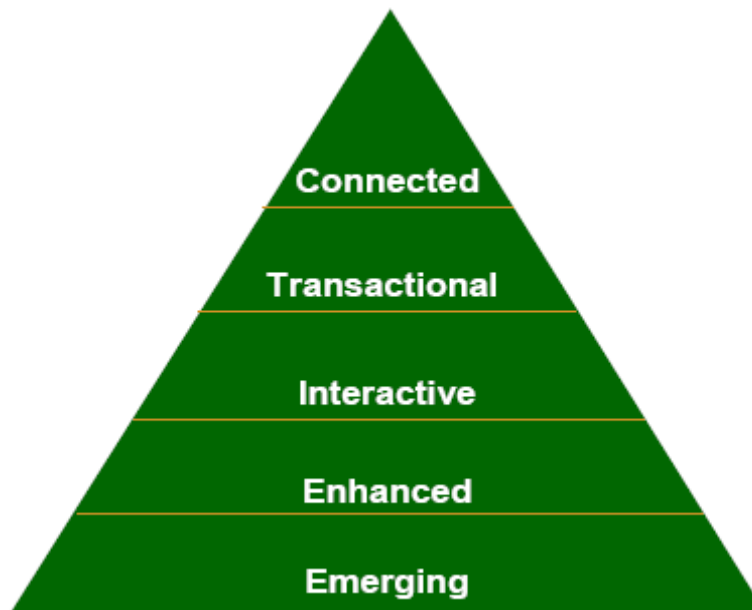
1.5.2 UNESCO e-readiness assessment framework for developing countries

As noted earlier in Section 1.5 of Chapter one the UNESCO (2005) e-government toolkit, specifically its e-readiness assessment framework, informed the present study. According to UNESCO (2005) the framework helps policy makers and senior executives in the developing nations by offering them comprehensive guidelines on formulating ICT policies that would ensure a successful road to e-government maturity. It was upon this understanding that the UNESCO e-readiness assessment framework would assist the present study in answering research question two and six on the appropriateness of the ICT policy in Swaziland and recommendations of the study. According to InfoDev (2008) this framework has been used in a number of studies in developing countries such as Botswana, Namibia, Nigeria, Senegal and South Africa and has proven to be very reliable. The framework assists in measuring the prevalence and integration of ICTs in homes, schools, business, health care facilities, and government offices, with additional focus on competition among access providers, speed of access, and government policy. Measurements are divided into five categories:

- Infrastructure
- Access

- Application and Services
- Economy
- Enablers (policy, privacy, security, and ubiquity).

Figure 2 is a diagrammatical representation of the e-readiness framework taken from UNESCO (2005).

Figure 2   UNESCO e-readiness assessment framework
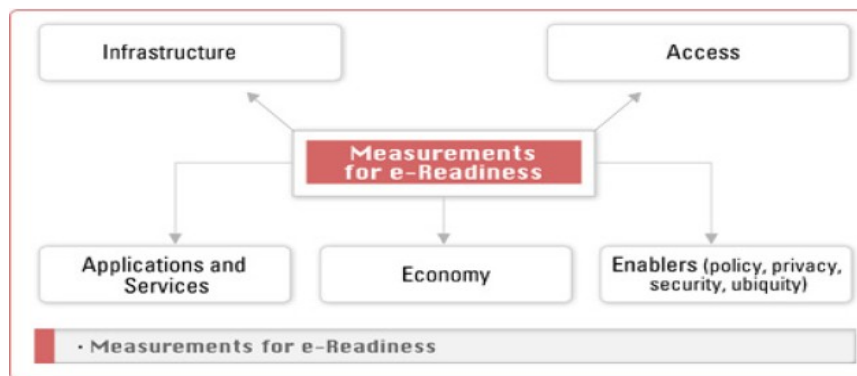
Source: UNESCO (2005)

1.6 Delimitations of the study

As much as the concept of e-services is widespread in Swaziland (government to government (G2G), government to citizen (G2C), government to business (G2B), and business to business (B2B), the present study focused on the public sector: G2G, G2B and G2C forms of interaction. Due to time and financial constraints this study only dealt with the most crucial challenges of e-government facing the country such as the development of an ICT policy and the potential priority areas such as information services.

1.7 Summary

This chapter presented background to and an outline of the research problem, definition of the key terms relevant to the study, theoretical framework which outlined the assessment framework and model for the study, justification of the study, the problem statement as well as the research questions asked in the study, and the delimitations of the study.

<center>**Chapter two**</center>

Literature review

2.0 Introduction

Knowledge does not exist in a vacuum as observed by Jankowicz (2000: 159) cited in Ngulube (2003: 31). Jankowicz (2000: 159) noted that research work only has value in relation to other people's work. The work and findings of any research will be significant only to the extent that they are the same as, or different from, other people's work and findings. The literature was reviewed to identify theories, models and ideas that were to help the present study answer the research questions.

The chapter discusses literature on e-government. The literature covers aspects on e-government as they relate to the research questions of the present study and the topics that enabled the research to discuss the findings of the present study. This chapter is organised into twelve parts: the objectives of e-government, policy issues, ICT policy, impact of technology for e-government, implications of e-government on financial and other related cost, approaches to e-government development, delivery methodologies for back office integration (in-house delivery, strategic partnership, and outsourcing), challenges and threats to e-government, critical success factors for e-government, measures of success/failures of e-government, monitoring and evaluation, a general overview of e-government in the world, the situation in Africa, and the view from Swaziland.

2.1 Objectives of e-government

According to Backus (2001: 3) the strategic objective of e-government is to support and simplify governance for all parties, for example government, citizens and businesses. UNESCO (2005) defines governance as the manner in which power is exercised by governments in managing a country's social and economic resources. The need for e-government as stated in UNESCO (2005) finds its origin from the broader factor pertaining to good governance. UNESCO (2005) says good governance is the exercise of power by various levels of government that is effective, honest, equitable, transparent, and accountable. Backus

<center>16</center>

(2001: 3) attests to this when saying good governance can be seen as an exercise of economic, political, and administrative authority to better manage the affairs of a country at both national and local level. According to UNESCO (2005) good governance involves a multifaceted approach that includes the application of ICTs. Backus (2001:3) concurs when saying e-government uses electronic means to support and stimulate good governance. The use of ICTs can connect all three parties (government, citizens and businesses) and support their processes and activities. Governments in the world as observed by Mutula (2008: 236) are under an obligation to implement e-government systems to enhance good governance and reduction of red-tape.

However, the International Records Management Trust (2008: 1) noted that while technology alone does not provide all the answers to good governance, reliable and accurate records do support good governance, provide evidence for accountability and protect citizens' right and human rights. Organisations like the International Records Management Trust help governments and organisations move to electronic environments by building trustworthy records systems as a foundation for data integrity and management information systems. Newman, Kassam and Shaw (2008: 3) argued that e-government is not simply putting government forms on-line, creating a static tourism website or even posting simple tariff schedules online, but rather it is the integration of government operations in the delivery of services to her citizenry and the business sector. Another objective of e-government is to enhance e-democracy. Backus (2001: 3) observed two main objectives of e-democracy as stated below:

1. To give citizens access to information and knowledge about the political process, and offer needed services and other available choices.

2. To make possible the transition from passive information access to active citizen participation by informing the citizen, representing the citizen, encouraging the citizen to vote, consulting the citizen, and involving the citizen.

It is evident from the literature that e-government is more than just a government on the Internet. Political, social, economic and technological aspects determine e-government.

2.2 Policy issues

Kandiri (2008: 2) defined a policy as a guiding principle designed to influence decisions, actions, and other related issues. A policy designates a required process within an organization. According to Kandiri (2008: 2) a policy is a plan of action to guide decisions and actions. The term may apply to government, private sector organisations and groups, and individuals. The policy process includes identification of different alternatives, such as programmes or spending priorities. The choice among them is done on the basis of the impact they will have on a particular entity. Policies as observed by Kandiri (2008: 2) can be understood as political, management, financial, and administrative mechanisms that are arranged to reach explicit goals.

It is evident from the above definition that a policy can be defined as a set of decisions which are oriented towards a long-term purpose or to a particular problem. Kandiri (2008: 2) noted that decisions by governments are often embodied in legislation and usually apply to a country as a whole rather than to one part of it. Also, it should be understood that policy is meant to provide proactive decision-making, not reactive decision-making. Scholars have highlighted some benefits as well as qualities of a good policy.

Kandiri (2008: 4) outlined the following benefits and qualities of a good policy:

2.2.1 Benefits:

- Help save time
- Help prevent managerial mistakes
- Improve consistency of decision making
- Focus decisions towards goals.

2.2.2 Qualities:

- Support and be consistent with organisational strategies, objectives
- Practical and directly relevant to the business
- Be reviewed frequently and amended as needed

- Limit discretion of managers/employees

- Precise, easy to understand and apply

- Be in written form

- Be applied and hopefully enforced

- Cascaded and interpreted to the lowest level

- Effective in meeting security requirements

- Must involve all key personnel.

2.3 National ICT Policy

According to Kandiri (2008: 5) a national ICT policy sets out the nation's aims, principles and strategies for the delivery of information and communication technology.

2.3.1 Objectives of an ICT policy

The common objectives of an ICT policy as reflected by Kandiri (2008: 5) include the following:

- Increasing the benefits from information technology

- Helping people and organisations adapt to new circumstances and providing tools and models to respond rationally to challenges posed by ICT

- Providing information and communication facilities, services and management at a reasonable or reduced cost

- Improving the quality of services and products

- Encouraging innovations in technology development, use of technology and general work flow

- Promoting information sharing, transparency and accountability and reducing bureaucracy within and between organisations, and towards the public at large

- Identifying priority areas for ICT development (areas that will have the greatest positive impact on programmes services and customers)

- Providing citizens with a chance to access information

- Attaining a specified minimum level of information technology resources for educational institutions and government agencies

- Supporting the concept of lifelong learning

- Providing individuals and organisations with a minimum level of ICT knowledge and the ability to keep it up to date

- Helping to understand information technology, its development and its cross-disciplinary impact.

Kandiri (2008: 8) stated that national ICT policies are like any other government policies in a country. They affect the lives of the citizens. According to Kandiri (2008: 8) the lack of a coherent policy is likely to contribute to the development (or prolonged existence) of ineffective infrastructure and a waste of resources. Newman, Kassam and Shaw (2008: 3) commented on this issue when stating that the e-government toolkit for Malawi has been created with the idea that physical infrastructure improvements alone will not suffice. According to Newman, Kassam and Shaw (2008: 3) the crucial role of policy, particularly the appropriate legal and regulatory environments, must be stressed when confronting the more apparent issue of low teledensity and Internet penetration. ICTs as mentioned by Kandiri (2008: 10) are so central to contemporary society that they affect us continually in many ways. According to Kandiri (2008: 8) if the telephone companies keep prices artificially high for broadband, or refuse to introduce a cheap flat rate for modem access, then citizens may have to pay too much to access the Internet. Also if telecommunications companies are not encouraged or obliged by regulation to roll out services in rural areas, people there will have

to rely on more expensive mobile phone services. Oyomno and Ramatlhape (2004: 46) stated that an ICT policy is an essential instrument to effectively manage the complexity of the emergent e-government environment. According to Oyomno and Ramatlhape (2004: 46) an ICT policy should have three interrelated components. These components are as follows:

The first component should address the expansion of ICT applications in government to include:

- Development of applications that seek to improve the internal efficiency and effectiveness of government administration systems and the integration of the range of government applications

- Development of applications to enable electronic delivery of government services (e-services)

- Development of applications to enable government to business (G2B) interactions through online procurement in government

Oyomno and Ramatlhape (2004: 46) stated that the second component of the process should focus on the development of ICT infrastructure that should enable active participation of the country concerned in the knowledge economy. The third component of the policy process should focus on the development of an enabling legal framework for the knowledge economy.

2.3.2 Benefits of having a national ICT policy

The United Nations Economic and Social Commission for Asia and the Pacific (2008) cited in Kandiri (2008: 9) stated that amongst other things, a national ICT policy should address the equitable:

- Development of ICT infrastructure
- Enhancement of public services
- Cost savings in service delivery, purchasing, and communications

- Electronic commerce and secure transactions
- Development of technological standards
    - Adoption of standards
- Development of skills-capacity building
    - Research and development
    - ICT education and training
- Development of legislation and policies to correspond to the requirements of
    - Diffusion of information technology
    - Development of ICT industries
    - Trade policies for ICT-related goods and services
    - Pricing and taxation of electronic services
    - Protection of intellectual property
    - Privacy of personal data
    - Protection of cultural and linguistic diversity
    - Protection against illegal and harmful content
- Institutional development and coordination
    - Institutional and regulatory structures
    - National ICT development coordination
    - International interface and cooperation
- Access to ICT infrastructure
- Access to information
- Monitoring ICT
    - Monitoring the use of ICT
    - Measuring the impact of ICT.

It is evident from the list above that a national ICT policy should comprehensively address almost all aspects that have an influence on the well being of a particular society.

The United Nations Economic and Social Commission for Asia and the Pacific (2008) cited in Kandiri (2008: 10) further stated that ICT policies have to take into account other policy areas such as education policies, information policies, trade and investment policies, and cultural and linguistic policies. The establishment of a written national ICT policy has value in itself. At a minimum, it conveys the message that the government is looking forward and

intends pursuing the utilization of ICTs in society. Kandiri (2008: 23) observed that government should aspire to putting the policy content into actual practice and becoming a role model in applying ICTs in their own administration and services.

Aita (2005) argued that the application of ICTs to government may encounter legal or policy barriers. Kandiri (2008: 23) attests to this when saying that ICT policy may encourage or discourage the application of ICTs. Legislatures as stated by Aita (2005) must ensure that laws are updated to recognize electronic documents and transactions. They must take proactive steps to ensure that policies support rather than impede e-government. Aita (2005) observed that policies have to ensure the success of the e-government programmes, in particular recognizing the validity of electronic documents and transactions. Adesida (2001: 24) noted that the role of governments in creating an information society that can seize the opportunities provided by ICTs is crucial. Governments must provide the strategic vision and the leadership. In addition, governments must help create the right regulatory and public policy environment based on stakeholders' participation. E-government, as reflected by the Working group on e-government in the developing world (2002: 9), can refer to many different things, and e-government plans come in all shapes and sizes. Thus, any country considering developing and implementing e-government should establish a clear vision for e-government. For example, the Department of Public Service and Administration (DPSA) as noted by Trusler (2008: 2) drafted South Africa's e-government policy in 2001 after an extensive two year consultation process with various private representatives, community organisations and public service officials. According to Trusler (2008: 2) the South African e-government policy outlines a ten year implementation plan for implementing e-government in South Africa. According to Trusler (2008: 2) the implementation plan draws on tested worldwide practices and seeks to avoid the mistakes, and improve on the successes of other governments implementing e-government initiatives.

2.4 The importance of technology for e-government

Backus (2001: 8) observed that the use of ICTs in government has impact on the following aspects: 24/7 model, need for content, human resources, security, privacy, and IT department.

- 24/7 model: Systems and processes have to be adapted to a completely new service model. According to Backus (2001: 8) processes are made "self-service" and even in the middle of the night a citizen should get an immediate (automated) response about the status of the application. Citizen's expectations towards governments' response time will change because of the new communication medium. Email should be seen as a new but serious channel besides the traditional channels such as telephone and fax.

- Need for content: Websites consists of content (information). Government, as reflected by Backus (2001: 8), will have to collect, produce and update content daily. In phase one content will be static, but in phase two, content will be changing every day. Content managers in each (large) department are responsible for the information on the website.

- Human resources: Effective use of ICTs in an organisation requires training of people. Backus (2001: 8) noted that people should feel comfortable with the tools they can use otherwise they will return to their old working patterns and habits. Maintaining technological infrastructure requires skilled IT personnel. Governments will have to compete with the private (commercial) sector to recruit the necessary IT skilled people.

- Security: Just about any computer system is vulnerable to external attacks. Backus (2001: 8) observed that, as the government moves its core processes (information, communication and transactions) to the Internet it is becoming far more vulnerable. Internet increases the number of entry points exponentially. Protection is possible with anti-virus software, firewalls, encryption technology, and authentic identification tools.

- Privacy: In phases three and four of the e-government model governments possess detailed information about citizens and businesses, which is often held in multiple offices on many different computer systems (or still in paper files). The integration of data can result in situations where the privacy of individual citizens is in danger. According to Backus (2001: 10) it is the responsibility of the government to restrict

the utilisation of private information, and secure such information from access by unintended parties. Due to public concern regarding privacy several countries have already passed data protection laws.

- IT department: With the implementation of e-government IT is becoming more and more important in government operations. Backus (2001: 8) stated that the need for a professional IT department will inevitably increase not only during implementation but also for maintenance of software, hardware and infrastructure.

Adesida (2001: 8) noted that if ICTs are properly used they can reduce poverty; empower people; build capacities, skills and networks; inspire new governance mechanisms and reinforce popular participation at all levels. The range of applications is limitless, from electronic commerce to the empowerment of communities, women and youth; from the promotion of good governance and decentralization to advocacy programmes, including the observance of human rights; from long-distance education to telehealth and environmental monitoring. The United Nations (2005: 1) commented on this when stating that the potential of information technology rests on unprecedented ability to process, store, and retrieve, duplicate and transmit information unconstrained by time, distance and volume. According to the United Nations (2005: 1) integrated information systems, products and services worldwide are now increasingly becoming available to the smallest of enterprises and remotest of regions.

2.5 The implications of e–government on financial and other related costs

The use of new technologies as noted by the United Nations (2008: 130) is seen as driving down operational costs associated with transactional services. Adesida (2001: 8) observed that not only do ICTs facilitate information exchange they are deepening the process of information exchange, creating new modes of sharing ideas, and reducing the cost of collecting and analyzing information. According to Adesida (2001: 8) ICTs are about information flowing faster, more generously, and less expensively throughout the planet. The belief that ICTs are formidable and cost-effective tools for development for developing countries is widespread. The United Nations (2008: 135) noted that the primary savings with the use of ICTs are seen in the move away from paper based systems, savings on storage

requirements and savings in time. Where national legislation and cultural norms prevent the achievement of savings through direct staff reductions, the staffing savings may be described in terms of reductions in projected future spend, that is, when the functionality of the new systems reduce the need for future recruitment as transaction levels increase.

The United Nations (2008: 135) stated that the cost saving in e-government emanates from transferring costs from the host agency (whether department or government body) to the service user. The user in this context could be a citizen, employee, department or corporate body. According to Backus (2001: 8) this is seen in the "self service" format of many e-government projects.

In addition to cost savings, the United Nations (2008: 136) noted that e-government should show results in the following areas:

- Greater potential to share workloads, access to the same data, reduce duplication of effort and associated cost.

- Real time information and efficient retrieval of data when dealing with information requests.

- Fast redirect of common queries and information requests, for example, through intranet based calculators and lists of frequently asked questions.

- Data storage access and retrieval of information assists compliance with legislation and improves audit trail and reduces corruption.

- Improved system providing more balanced workflow and better information retrieval improving staff satisfaction and retention.

Mutula (2008: 236) summarised the issue of costs by stating that e-government is aimed at cutting costs and improving government efficiency.

However, the Working group on e-government in the developing world (2002: 1) argued that e-government is not a shortcut to economic development, budget savings or clean, efficient government. E-government is not the "Big Bang", a single event that immediately and forever alters the universe of government. According to the Working group (2002: 1) e-government is a process and often a struggle that presents costs and risks, both financial and political. These risks can be significant. Greenberg (2006: 9) commented on the aspect of cost when stating that though many bureaucrats believe e-government will yield high savings, the upfront e-government costs of new technology are substantial and costs savings do not emerge until enough users start taking advantage of the electronic delivery systems.

2.6 Approaches to e-government development

The United Nations (2002: 50) noted four fundamental approaches to e-government development, namely: 1. National coordinated or top-down approach, which is driven by the central government and often features a national strategic plan that coordinates all e-government initiatives, spending and implementation, among ministries, departments, agencies and units. 2. A nationally autonomous or parallel approach where ministries and agencies develop their own e-government initiatives with less formal strategic planning, support or coordination from the central government. 3. Sub-nationally where local and state government tend to be the drivers and initiators of programmes that rise up and are eventually adopted as policy by national government. 4. Sub-nationally autonomous approach where again the innovations and programmes are developed at the local levels, but have modest influence on the national government activities.

2.7 Delivery methodologies for back office integration

According to the United Nations (2008: 134) the methodology for delivering back office integration is usually based on one of three approaches: in-house delivery, strategic partnerships and outsourcing.

2.7.1 In-house delivery

According to the United Nations (2008: 134) in-house delivery is based on projects being developed and implemented by an in-house team, often supported by a combination of external and temporary consultancy support for specialist areas. Under this model, the leadership and overall management of the project rest with the host organization. The United Nations (2008: 134) stated that the rationale for this approach is not necessarily based on cost although that may be stated as a reason. The actual cost advantage over other modes are limited given the need to replace staff involved in the project and the need to acquire temporary and consultancy support for specialist areas – or to recruit additional staff and train existing staff. More often the rationale is political and cultural, to retain control of the project and to be seen to lead the change from within. The in-house approach may also be a pragmatic response to the absence of available or willing strategic partners or the absence of a mature outsourcing market. According to the United Nations (2008: 134) this mode of delivery has the following strengths and weaknesses.

2.7.1.1 Strengths:

- Retains full control of project
- Allows for flexibility in implementation
- Ability to link to other priorities
- Maintains "ownership"
- Develops skills and knowledge in-house
- Can be cost effective
- Can be motivating for in-house staff.

2.7.1.2 Weaknesses:

- Lack of appropriate knowledge and skills leading to:
  - Poor project design, control and delivery
  - Expense of interim and temporary arrangements, for example, consultants

- Allocation of in-house staff to the project leading to a negative impact on existing services and the cost of temporary staff to 'backfill' for staff allocated to the project.

2.7.2 Strategic partnerships

According to United Nations (2008: 135) the strategic partnership model differs from outsourcing in that the function is retained in-house. However, unlike in-house delivery, a relationship is formed with an external supplier to deliver the project. This relationship is based on a contract and generally involves an external partner able to bring in specialist expertise as well as investment in technology. The United Nations (2008: 15) stated that the contractual relationship is usually long-term (10 years or more) and involves a mutual commitment to develop innovative service delivery. The partnership element is seen as bringing a different quality to the relationship that lies outside of a normal commercial 'purchase/supplier' relationship. This is often characterised as the alignment of goals and interests between the two parties. Despite the use of the term 'partnership' it is important to note that at the heart of a successful strategic partnership is a sound contractual relationship that provides security, in terms of commercial return for the private sector partner as well as the transparency to ensure that public funds are being appropriately spent. Also, according to the United Nations (2008: 15) this mode of delivery has its own strengths and weaknesses.

2.7.2.1 Strengths:

- Brings in external expertise, knowledge and skills
- Can provide capital investment in technology
- Knowledge transfer between in-house and external staff
- Clarity of objectives and deliverables
- Retains control of the project/function
- Reduces scope for internal politics to affect deliverables.

2.7.2.2 Weaknesses:

- Requires long-term commitment and associated costs

- Potential mismatch in culture and expectations between partners

- Unresponsive to changing priorities/politics as contractually based

- Dependency on partner

- Delivery affected by internal politics/other activities of partner; for example changes in a parent company can adversely affect the partner's commitment and involvement.

2.7.3 Outsourcing

The United Nations (2008: 135) noted that outsourcing involves the transfer of a function or entity to another organisation – usually, although not exclusively, to a private sector organisation. Under this model the public body no longer retains the responsibility for implementing changes but rather relies on an output based contractual arrangement to ensure the desired benefits are delivered. According to the United Nations (2008: 136) the decision to outsource a particular function is generally made on the basis that the outsourcing supplier will deliver a service that is better than the organization currently operates or is able to develop in-house, for instance by maintaining outputs for example, volumes, whilst reducing costs or by introducing new skills and higher levels of expertise. As an alternative to implementing back office integration in-house or working with a strategic partner, outsourcing is a less certain route given that control is passed to another body which may opt for a different solution to that preferred by the hiring department or not deliver the same quality levels. For example, the United Nations (2008: 135) stated that it is often difficult to specify the quality of the service required in terms of performance against key measures where those measures are "soft measures", for instance the quality of care delivered to the elderly. Measuring volumes and cost reductions is easier than gauging the quality required. Early in the outsourcing process the baseline service quality needs to be determined. This can be a cultural challenge as many organisations are not used to measuring the kind of output-based performance which forms the basis of the contractual arrangements necessary in outsourcing. Greenberg (2006: 9) commented on this aspect when stating that the process of outsourcing is often contentious. According to Greenberg (2006: 9) the decision to outsource may depend on the complexity of the new programme. The United Nations (2008: 136) noted that this mode of delivery has its strengths and weaknesses.

2.7.3.1 Strengths:

- Passes the problem to a third party to solve
- Brings external resources and expertise
- Brings additional investment.

2.7.3.2 Weaknesses:

- Less control on methodology of delivery – control is on outputs
- Potentially high cost
- Contractual relationship may be inflexible
- Requires expertise and time to outsource but far less than in-house
- Costs of contract management
- New skills required in contract management.

2.8 Challenges and threats to e-government

Grant (2008: 13) stated that effective implementation of e-government applications necessitates identifying and forecasting potential challenges in the international and domestic environment. Some of these challenges and threats include the digital divide, and financial and human resource constraints.

2.8.1 Digital divide

According to Grant (2008: 13) many citizens and businesses may not be able to access e-government related services because they are not connected to information and communication networks. Grant (2008: 13) observed that the lack of connection may be due to:

- Geographic isolation of rural and inaccessible areas from networking facilities
- Gender inequalities as a result of social, religious or economic factors
- Income disparities (poor cannot afford cost of access equipment and connection services)

- Isolation because of physical disability
- Linguistic barriers, for example, in website content and online educational programmes.

The United Nations (2005: 1) commented on this when stating that a serious access-divide exists across the world between the developed and developing countries. Of particular concern are the countries belonging to the regions of South and Central Asia and Africa which, together, house one-third of humanity. According to the United Nations (2005: 1) access-divide comprises, among others: income divide, telecommunication access-divide, education access-divide, language and content access-divide, lack of access to people with disability, gender access-divide, and rural-urban divide.

2.8.2 Financial and human resource constraints

According to Grant (2008: 13) the following are potential challenges and threats to e-government:

- Inadequate financing for e-government initiatives
- Lack of managerial, technical and operational capacity for designing deployment and executing e-government applications
- High training and retraining costs for government employees
- Lack of resources for training citizens on using e-government applications.

2.9 Critical success factors for e-government

The successful implementation of e-government strategies as reflected by Grant (2008: 16) is closely related to some of the following critical success factors: strategic leadership, community and private sector participation, public access, privacy and security concerns, cultural and social concerns and effective partnership between public sector, private sector and civil society.

2.9.1 Strategic leadership

According to Grant (2008: 16) e-government requires strategic leadership and involvement of the head of government (President or Prime Minister) as well as ministers and senior officials. Grant (2008: 16) stated that they must play a significant role in devising and promoting e-government vision and strategies. They should also try to ensure collaboration and coordination among the various entities involved in deploying e-government. The United Nations (2005: 1) commented on this aspect when stating that the pattern that emerges is that for effective e-government development, political commitment to harnessing the benefits of ICTs, a well thought-out vision, and doable objectives are important markers for successful e-government development. If governments are to be successful in multi-channel service delivery for public goods, Newman, Kassam and Shaw (2008: 3) noted that there must be forward thinking leaders to commit resources for future benefits. The e-government toolkit for Malawi as stated by Newman, Kassam and Shaw (2008: 3) promises to provide decision makers with the necessary guidelines to make the most prudent decisions and gauge progress against the successes and failures of other nations. Newman, Kassam and Shaw (2008: 3) observed that the toolkit targets six distinct areas for initiating sustainable e-government programmes: connectivity, leadership, human capital, intergovernmental, policy and e-business environment.

2.9.2 Community and private sector participation

In this regard Grant (2008: 16) noted that public acceptance and support at all levels is essential for e-government implementation.

2.9.3 Public access

According to Grant (2008: 16) public access to electronic facilities and services is essential. Grant (2008: 16) noted that without public access there will be no e-government. Differential access opportunities will only serve to increase the "digital divide".

2.9.4 Privacy and security concerns

Regarding this aspect, Grant (2008: 16) stated that concerns about privacy and security must be addressed to build citizens' confidence in electronic channels. If this is not done then services will have to be duplicated and the cost and quality objectives will not be met.

2.9.5 Cultural and social concerns

Grant (2008: 16) observed that e-government may be resisted for cultural, religious, or traditional reasons. Governments may need to provide alternative access channels to support affected citizens.

2.9.6 Effective partnership between public sector, private, and civil society

According to Grant (2008: 16) government cannot deliver e-government applications alone. It requires strong partnership with the public sector itself, with private sector entities, and with civil society groups such as union and consumer advocacy bodies.

Undheim (2008: 22) commented on some of these issues when stating that achieving leadership buy-in, keeping technology as simple as possible, getting early stakeholder and user involvement, introducing innovations slowly and building momentum and planning for sustainability are success factors for e-government. As to how slowly governments should introduce the innovations and build the momentum, Undheim (2008: 22) gives no clue.

2.10 Measures of success and failures of e-government

Regarding measures of success and failures of e-government, Grant (2008: 17) observed that for e-government to succeed, practical measures that will indicate whether the objectives set out are being achieved are needed. UNESCO (2005) attests to this when noting that, based on the overall vision or goals associated with the e-government plan, countries can work out a list of indicators against which they would like to measure the progress. However, each country has to work out its own matrix. According to UNESCO (2005) the performance indicators could be identified as being 'quantitative', for example the number of departments

having a web presence or 'qualitative'. Regarding the qualitative indicators UNESCO (2005) stated that they try to judge the impact of the overall e-government efforts on society at large in terms of economy, social development, effectiveness and efficiency of administration and governance. According to Grant (2008: 17) some of the measures that can be applied to ascertain the success and failures of e-government include the following:

- An increase in the number of people connected to public networks
- The range of services available through electronic channels and the extent of the services
- The number of citizens and businesses accessing services through electronic channels
- The increase or reduction in citizen queries and complaints
- The time taken to respond to queries and complaints
- The reduction in cost or improvement in the quality and quantity of services delivered
- The extent of inter-agency integration and information sharing.

2.10.1 Monitoring and evaluation

The Working group on e-government in the developing world (2002: 3) noted that the e-government process needs continuous input and feedback from the relevant stakeholders: the public, and businesses and officials who use e-government services. The monitoring and evaluation of e-government projects as reflected by UNESCO (2005) involve an assessment of the usability of government portals/websites. UNESCO (2005) stated that most of the time a concerted effort towards e-government involves the setting up of a website/portal which acts as a front-end for accessing the online services. Since this website forms the face of the entire effort in front of the stakeholders, it is important that there is convenience and ease of use as far as the user interface of these government sites is concerned. According to UNESCO (2005) an important aspect, therefore, in terms of evaluation becomes the assessment of these government websites. Some of the parameters which may be used for assessing the usability and citizen centricity of government portals could be broadly grouped under six categories, namely: accessibility, navigation architecture, content, design and layout, reliability and evaluation technique.

2.10.1.1 Accessibility

Accessibility in the context of e-government as stated by UNESCO (2005) refers to the extent to which the portal and its contents are available to a wide range of users with varied levels of physical capabilities/skills and technology. According to UNESCO (2005) a portal being universally accessible would imply that a broad range of software, hardware and audiences, including physically challenged citizens can not only access the online content and services on the portal but are also able to effectively make use of it. The World Wide Web consortium (W3C) Web Accessibility Initiative (WAI) is an internationally agreed recommendation for website accessibility for people with special needs and it is expected that government websites follow these standards. UNESCO (2005) noted that it is important that reasonable steps are taken to sensitize the developers to alter practices, policies and procedures that make it impossible or unreasonably difficult for people with disabilities to access or use the web portal.

2.10.1.2 Navigation architecture

Navigation architecture as reflected by UNESCO (2005) includes all the features which make it convenient/inconvenient for a user to browse the contents on the portal. The navigation architecture should be such that users spend minimal time and effort in locating and using the desired information and services online. According to UNESCO (2005) even if the web portal has valuable information for the citizen, it is not of much use if that information is buried somewhere deep inside the piles of content and the visitor is not able to easily reach it. Moreover, a certain consistency in the navigation pattern is very important, particularly for huge portals with large numbers of modules and pages. Despite the web's promise for ease of use and access, Garcia-Gil et al (2008: 2) noted that in terms of creativity and efficiency, agency managers and leaders are finding that websites are increasingly presenting challenges of inflexibility, inconsistency, workflow bottlenecks and costs.

2.10.1.3 Content

A government portal as observed by UNESCO (2005) should be oriented towards its citizens. This means that the content in the portal has to be defined in the manner that the citizen wants

and the portal should act as a platform to provide the information and services, hitherto provided conventionally by the government, in a faster and convenient manner. Also, equal emphasis needs to be given to the way it is written and presented. According to UNESCO (2005) the content aimed at the common public must be written plainly and in a language which people with diverse educational and knowledge backgrounds can easily understand. This category includes all those parameters which influence the extent to which citizen friendly, authentic, correct and most updated content is provided, in a suitable format, on the government web portals. Another important pre-requisite for an effective government website is the availability of comprehensive contact information which may be used by a citizen to approach the government functionaries. UNESCO (2005) noted that a citizen centric website shall not only have the email addresses of the various government officials/departments but also the postal addresses and/or the telephone/fax numbers so that a user with limited access to the Internet may also be able to refer to the information from the site and then contact the department concerned.

2.10.1.4 Design and layout

In this regard, UNESCO (2005) observed that web portals should have citizen friendly design and layout so that people find it enjoyable and comfortable to access the desired information with minimum fuss. The colour scheme of the portal and the positioning as well as consistency of the design elements has to be such that it allows for legibility and easy reading. The features included in this category affect the way graphics and design elements, as well as the layout of the portal appears.

2.10.1.5 Reliability

Reliability in this context according to UNESCO (2005) refers to the extent of trust which a citizen can impose on the government website with respect to security and legal requirements. UNESCO (2005) noted that government websites must raise citizens' confidence by abiding by the law and explaining their terms and conditions clearly to the users. The issue assumes more importance when it comes to online transactions as well as making payments through the website. Well-worded disclaimers, privacy policies, terms and conditions and copyright information enhance the credibility of the website and help in

further building the users' trust. Another equally important aspect related to credibility as stated in UNESCO (2005) is the site address or the URL. As per the international naming conventions, each country has reserved certain domain(s) for government websites, for example, 'gov', '.gov.sg' (Singapore), '.nic.in' and '.gov.in' (India) and such domains are not freely available for registration by anyone as they are allocated to a government department only after due verification. Thus, the presence of such an address further adds to the credibility of the government website.

2.10.1.6 Evaluation technique

According to UNESCO (2005) a variety of qualitative and quantitative evaluation techniques can be deployed to assess the performance, impact and citizen-centricity of the government website. UNESCO (2005) presented the techniques in the following manner: lab testing, online user surveys, interviewing focus groups, syndicated surveys, informal user feedback, usage data analysis, web performance data, and expert review.

2.10.1.6.1 Lab testing

This technique involves inviting a select group of users to a laboratory setting and asking them to access and navigate the various sections of the website. Structure testing is then carried out on the way different users browse through the site and its various online features. User behaviour, when analyzed, proves an important source to measure the usability and performance of the site.

2.10.1.6.2 Online user surveys

This technique involves the website visitors responding to questions posed through pop-up surveys which appear whenever the site is accessed. This technique allows the website managers to survey a large number of users in a relatively short span of time. Online user surveys could be both randomised or carried out amongst a selected panel of audience based on characteristics such a qualification, age groups, ethnic background and others.

2.10.1.6.3 Interviewing focus groups

This technique involves selecting a focused group of target users and having a moderator ask them a prepared set of questions about the usability and citizen orientation of the website. The group could also be asked to perform certain test exercises such as specific citizen services online or downloading an application form from the website. Such interviews could be carried out either face to face or in the form of 'virtual' group discussions.

2.10.1.6.4 Syndicated surveys

This method involves buying access to the results of third party surveys carried out on the users to monitor the performance and functionality of the websites on a general basis. Though such results have high statistical validity, they may be too general for a government to extract evaluation results and data pertaining to the aspect of citizen centricity.

2.10.1.6.5 Informal user feedback

This technique involves analyzing the unsolicited feedback of the visitors to the website received from time to time through guest books, email forms, helpdesk, phone lines and others. Such feedback can help the government departments to eradicate snags and errors in the site and also to formulate questions and exercises for formal user surveys.

2.10.1.6.6 Usage data analysis

This kind of evaluation technique involves the analysis of the web log data collected through specialized software installed on the web servers. Quantitative data like page views, number of hits, unique visitors can be obtained through this method, which allows a government department to track overall usage trends over time.

2.10.1.6.7 Web performance data

The technique here involves measuring the site's performance on technical aspects like the download time, speed of data transfer, number of broken links, accessibility for the disabled.

There are various specialised tools, testing software and free websites which facilitate an online evaluation of a website regarding the above aspects.

2.10.1.6.8 Expert review

Finally, an important qualitative method of assessing a government website is through an expert review. In this approach, a panel of experts reviews the website and evaluates it against a set of pre-defined parameters. As stated above, different countries will have different sets of performance indicators and evaluation techniques for their e-government plan, since they will be driven by the goals and targets set in the overall vision of a country's e-government plan. The countries should not view evaluation as a one-time activity and it should not be conducted only at the end of the project/programme. This is because the feedback received from evaluation at that stage becomes very difficult to incorporate or introduces cost and time overruns. Evaluation strategy as well as indicators should be a part of the overall plan of the project and programme.

2.11 E-government in the world

The information in this section has been compiled with the assistance of an e-government index. According to the United Nations (2002: 7) an e-government index is a tool which is useful for policy planners and is employed as an annual benchmark that presents a more inclusive and less subjective measure of a country's e-government official online presence, evaluates its telecommunications infrastructure and assesses its human development capacity.

The United Nations (2002: 7) noted that the index identifies, underscores and weighs the importance of the requisite conditions which enable a country to sustain an e-government environment which ensures that every segment of its population has unconstrained access to timely, useful and relevant information and services. According to the United Nations (2002: 7) the results of the e-government index tend to reflect a country's economic, social and democratic level of development. The web measure as reflected by the United Nations (2008: 14) is based upon a five-stage model which builds upon the previous levels of sophistication of a member state online presence (see figure 1). As a country migrates upwards through the various stages, it is ranked higher in the web measure index. The national portals or the

official government website of the member state are the primary sites evaluated to establish the e-government index. Industrialized nations, whose citizens enjoy the benefit of abundant resources, superior access to information and a more participatory relationship with their governments, as observed by the United Nations (2008: 19) rank well above the mean e-government global index of 0.4514. Regionally the e-government indexes are as follows, Europe (0.6490), America (0.4936), Asia (0.4470), Oceania (0.4338) and Africa (0.2739). Asia and Oceania are slightly below the world average 0.4514, while Africa lags behind. Among individual countries, Sweden (0.9157) is the current global leader followed by Denmark (0.9134), Norway (0.8921) and USA (0.8644) taking the fourth position. The United Nations (2008: 19) observed that the world average of the global e-government index continues to increase as more countries invest resources in developing websites that are informative. Most countries have e-information on policies, laws, and an archives section on their portals/websites. However, "the gap between e-information, e-consultation and e-decision making is still wide for developing and developed countries" (United Nation 2008: 19).

According to the United Nations (2008: 2) in the last few years ICTs have become increasingly affordable. As technologies have advanced, the cost of infrastructure and accessibility has been drastically reduced around the world. For example, broadband prices for DSL connections across 30 developed countries fell by 19 percent while the speed of connection increased by 29 percent in 2006. The reduction in costs as observed by the United Nations (2008: 2) has led to a jump in the adoption of new technologies in many developing countries as well, without the national governments having to incur heavy investment in land-based infrastructure. In particular mobile telephony has increased in the last few years, allowing for an unprecedented accessibility for the average user.

Ambitious e-government initiatives have been launched in many countries. A study by Lam (2005) disclosed that in December 2002, President George W. Bush signed e-government into law, signalling a major step towards modernizing public sector IT in the U.S.A Moreover, in the UK, the target set by the former Prime Minister Tony Blair was to have 100 percent of all government services online by 2005. More generally in Europe, a major goal of the European Union's e-Europe 2005 plan was to have modern online public services in e-government.

According to the United Nations (2008: 14), governments are moving forward in e-government development around the world. However, given the high demand placed by e-government on a multitude of foundational pillars which include prerequisites of infrastructure, appropriate policies, capacity development, ICT applications and relevant content that need to be in place to fully implement e-government services, progress is slow. The United Nations (2008: 14) noted that only a few governments have made the necessary investment to move from e-government applications per se to a more integrated connected governance stage. Newman, Kassam and Shaw (2008: 2) argued that the concept of e-government is no longer a fantasy, or unfamiliar concept to political leaders, civil servants, or business captains around the globe. According to Newman, Kassam and Shaw (2008: 2) few disagree on the dire necessity of connecting government more effectively with her citizenry and industry, as well as promoting the training of future generations to capture the benefits of a knowledge-based economy. However, Newman, Kassam and Shaw (2008: 2) observed that very few of these national leaders are quite sure about the state of e-readiness of their own country, what needs to be changed, and what barriers exist, and they often fail to see the benefits of such changes.

The United Nations (2002: 8) noted that since services are the public face of government, the primary objective of all e-government initiatives is to provide the citizen user with an efficient alternative medium for interacting with public sector service providers. This is generally accomplished by improving the flow of information both externally and internally. Information as reflected by the United Nations (2002: 8) is government's most fundamental output and consequently, transforming ministries, departments, agencies, units and staff to make them "e"-ready is an intense and challenging process. According to the Working group on e-government in the developing world (2002: 1) if not well conceived and implemented, e-government initiatives can waste resources, fail in their promise to deliver useful services and thus increase public frustration with government in terms of service delivery. Particularly in the developing world, where resources are scarce, e-government must target areas with high chances for success and produce winners.

2.12 E- government in Africa

The United Nations (2002: 4) stated that despite the incredible advances made in information technology, making government electronic is, and will continue to be into the foreseeable future, a complex and constant process in Africa. Countries vary radically in their approach, level of development and overall commitment to e-government. Critical endemic factors like available resources, ICT policy, political leadership, economic capacity and the character of the civil society deeply impact on the scope and breadth of e-government policy. The United Nations Economic Commission for Africa (UNECA) (2005) disclosed that only 28 countries had ICT policies in Africa. An ICT policy as stated in the report of the United Nations Economic Commission for Africa of 2005 is a critical component in e-government implementation. However, Weerakkody et al (2007) argued that most developing countries in Africa are at the emerging stage of e-government development and lag far behind developed nations, despite having had national e-government strategies in place for a considerable period of time.

Regarding political leadership Ngulube (2007: 3) observed that it should be committed to press changes in the face of institutional rigidity, technological backwardness, and political resistance. Ngulube (2007: 3) noted that Sub-Saharan African leaders have not shown full commitment to improve the ICT infrastructure in order to transform government processes. According to Ngulube (2007: 4) the adoption of the African Information Society Initiative in 1996 held hope for Africa. The initiative aimed at providing an action framework to build Africa's information and communication infrastructure, but little progress was witnessed due to lack of resources and political will.

Nua (2000) cited in Mutula (2005) argued that the digital divide in developing countries in general and Africa in particular is closely tied to the contextual economic environment of the respective countries. Countries with thriving economies are by and large associated with increased access to ICTs compared to those whose economies are doing badly. The digital divide in Africa is also exacerbated by the scant attention paid to the ICT needs of disadvantaged people in society such as rural poor, women and children, as well as people with visual impairments and hearing problems.

The United Nations (2002: 52) noted the existence of a significant digital divide within national public administration, also a considerable lack of public awareness campaigns informing citizens that national governments are offering online service delivery.

Bakuli (2002) cited in Mutula (2005) stated that the problems of the digital divide in Africa are also attributed to inefficient utility infrastructure. The electricity infrastructure needed for supporting any digital technology is largely deficient in Africa. Other problems affecting Africa include a short supply of people who are able to code content for which there is a high worldwide demand, and the lack of competitive incentives to IT expertise, including web content developers. This scenario results in the continent easily losing expertise to other regions, especially Europe, and the USA, where remuneration packages and other incentives offered are lucrative. Ngulube (2007: 5) attested to this when saying human resources are scarce due to the brain drain and lack of capacity building programmes in Sub-Saharan Africa.

Mutula (2005) further observed that Africa is known for its low literacy rate, which undermines content creation and use. Adesida (2001: 8) attested to this when saying in Africa literacy rates are low with too many people unable to read or write. Even when one can read, ICTs require training to be able to use them effectively. According to Adesida (2001: 8), despite novel ways of providing access through community centres and sharing of access, these efforts conspire to keep the financially poor away from joining the information society. The Department of Economic and Social Affairs (2003) stated that literacy today also means ICT literacy and skills. According to the Department (2003) ICT literacy among citizens has a significant role to play in implementing e-government as it is fundamental to the ability of citizens to access and use electronic information.

The Department of Economic and Social Affairs (2003) observed that many government websites in Africa are not fully functional and are populated with information that does not enhance service delivery and participatory democracy. Mutula (2008: 236) attested to this when stating that most government websites in Sub-Saharan Africa are still very basic, providing little interaction with the citizen. Most of the government websites have paid little attention to enhanced citizen-government engagement. Schuppan (2007) cited in Mutula noted that e-government in developing countries is still in its infancy. Yet a fully functional

e-government website should have an e-participation framework which provides e-information on policies and programmes, budgets, laws and regulations, e-consultation mechanisms and tools and e-decision making. According to the Department of Economic and Social Affairs (2003) governments with an e-participation framework are participatory and inclusive. Ngulube (2007: 4) noted that in many instances citizens are still obliged to visit government offices even if they may download certain documents from government portals as they may not be processed online. According to Ngulube (2007: 5) concerns about privacy and confidentiality impede the development of e-government. In that regard many governments do not have laws, policies, and standards for privacy protection and information protection.

Ngulube (2007: 5) stated that another problem facing Africa and the Sub-Saharan region in particular is the absence of government departments to coordinate and oversee the implementation of e-government projects, and they are grossly under resourced in instances where they exist.

United Nations (2008: 19) lamented that with a regional index of 0.2739, Africa's e-government capacity could be described as deficient. According to the United Nations (2002: 45) this index reflects a near total absence of the core areas necessary to sustain an enabling e-government environment. But despite the region's appalling lack of an adequate telecommunication infrastructure, nearly all Sub-Saharan African countries have some form of web presence. There are notable exceptions as reflected in the United Nations (2008: 26), South Africa (0.5115), Lesotho (0.3805), Botswana (0.3647), Swaziland (0.3454) and Namibia (0.3445) all of whom exceeded the regional index of 0.2739. The United Nations (2008: 26) observed that South Africa's e-government rating of 0.5115 is the highest in Africa allowing the government to successfully emulate the programmes of industrialized countries. As a standout e-government leader in Sub-Saharan Africa, the United Nations (2008: 26) observed that South Africa has a strong online presence. The website of the Department of Labour (http://www.labour.gov.za) in particular, is an excellent example of a public agency website that is well tailored to the needs of its stakeholders. The website has a very attractive and simple design that allows users to quickly find what they are looking for. Within the e-government model, South Africa is believed to be in stage three, which provides more interactive interfaces between all stakeholders. At this stage, e-government integrates

the complete range of government services, and provides a path to them that is based on need and function, not on department or agency. For example, citizens may be able to register a birth or death, apply for social welfare grant, pay taxes, access government legislation and information on activities of their representatives in parliament and local government without having to leave their homes or offices. However, it is worth noting that Internet access is still beyond the reach of many citizens in South Africa. According to the Internet world stats (2008) the number of Internet users in Africa has risen from 200 000 in the year 2000 to 51 065 630 as of June 2008 with 5.3 percent Internet penetration rate. The United Nations as an institution with an interest in matters pertaining to e-government in the continent has noted that:

> The obstacles of cost, intervention of prevailing political party views and priorities, and the inability to find a common strategy or theme which determines how e-government should develop, either across countries or within one country's government, remain the biggest barriers to developing an enabling environment capable of sustaining interactive and eventually transactional service delivery in all African countries (United Nations 2002: 47).

Two independent sites, Africa online and Newafrica provide a unique service and are sources for accurate and frequently updated information for every country. These sites fill a vast e-government void for many countries. The United Nations (2002: 46) noted that, although the sites do not link to legislation and ministry websites, the scope of their content and the mere fact that single sites have consolidated information on so many countries allows each to function as a de facto single entry portal. Africa online allows users to access dynamic information about developments in every country, regardless of the progress that government itself has made online. A residual benefit of these sites is the building of an information and e-government culture among Africans.

Anderson (2007:1) reporting for *News24* says the Nepad e-Africa Commission plans a mega undersea cable broadband project which will be ready by 2010. The cost of the planned cable project will be in the region of $2 billion (about R20 billion at current exchange rate). It will span the East and West coasts of Africa with links to island countries like Madagascar and Mauritius as well as a terrestrial network including landlocked countries, and connecting Africa with Brazil as well as Europe, India and the Middle East. The proposed broadband

would have a massive capacity of 3.8 terabytes which would eventually cut Internet tariffs on the continent.

According to Anderson (2007: 1) the South African Government has repeatedly said that high costs for phone calls and Internet access are inflating the cost of doing business, deterring investors and impeding the rollout of basic communication to the poor. Anderson (2007:1) states that the experience of South Africa (with Telkom and SAT-3) and Mauritius has demonstrated that an entirely private sector led undersea cable project was like a private club deciding on its own pricing levels, to the detriment of the countries requiring affordable broadband connectivity.

Frustrated with the slow progress on a new submarine cable for Africa, Anderson (2007: 1) stated that Kenya intended joining a new project linking that country to Europe via Asia and has plans to lay a different cable to the United Arab Emirates.

From the literature it is evident that the infrastructure and human capital challenges have not deterred e-government progress in some countries. South Africa and Lesotho for example, have taken the initiative to upgrade their official government sites with interactive features that include, search capabilities, site maps, feedback, broadband and discussion boards. This development indicates an increasing acceptance among decision-makers in some countries that e-government is an essential and potentially powerful medium through which to disseminate information to citizens.

2.13 E-government in Swaziland

This section covers aspects on Swaziland as they relate to e-government: namely, background information on Swaziland, policy issues, telecommunication infrastructure, ICT infrastructure in government, ICT expertise in government, ongoing e-government initiatives, benefits of e-government for the Swazi citizens and a summary.

2.13.1 Background

Swaziland is a Kingdom country situated in Southern Africa, between Mozambique and South Africa. It has an area of 17, 363km^2 and a land boundary of 535 km. There are four administrative divisions in this country; Hhohho, Lubombo, Manzini and Shiselweni. Swaziland has a relatively mountainous relief with the following elevation extremes; the highest point being Emlembe which is 1 862m above sea level and the lowest point being the Great Usuthu River which is 21m above sea level.

The Internet world stats (2008) place the country's population at 1, 128 814. According to the Swaziland Government website (2007) the economy stands at $1 279.4 million with an inflation rate of 12.6 percent. The country is 22 percent urbanised. The unemployment rate is 22.8 percent. According to the *World fact book* (2008) the literacy rate stands at 81.6 percent in the Kingdom.

According to the Constitution of the Kingdom of Swaziland (2005) the system of government is a Tinkhundla-based system which emphasises devolution of state power from central government to Tinkhundla areas and individual merit as a base for election or appointment to public office. The Tinkhundla units or areas, inspired by a policy of decentralization of state power, are the engines of development and the central pillars underpinning the political organisation and economic infrastructure of the country through which social services to the different parts of the Swazi community are facilitated and delivered.

2.13.2 ICT policy

The Prime Minister of Swaziland launched an ICT policy for the country on the 29th March, 2008. During the launch of the policy the Prime Minister publicly endorsed the ICT policy.

> The policy objective is to enhance national socio-economic development by encouraging the beneficial activities of ICT in all sectors through the provision of a conducive environment that will progressively maximize the quality and security of the life of the people of Swaziland and make the best use of the country's human and

natural resources, and promote multi-layered co-operation and knowledge sharing nationally, regionally and globally (Swaziland Government 2006: 37).

Among the specific objectives of the ICT policy is the fact that the policy shall ensure that all sectoral development plans and projects have an ICT component and to coordinate ICT activities in the country including the formulation of appropriate policies, strategies and plans for the implementation of e-applications for example, e-government, e-governance, e-health, and e-commerce.

The strategies to achieve the objectives of the ICT policy as reflected in the ICT policy document (2006: 37) include building broadband capacity in the information and communications infrastructure, introducing new services to improve universal access and service quality, and promoting the deployment and exploitation of information, knowledge and technology within the economy and society in order to address issues related to equitable access to education and training. The ICT policy for the country has incorporated recommendations that were made by Oyomno and Ramatlhape (2004:1). According to Oyomno and Ramatlhape (2004:1) the country was to develop a national ICT policy that would guide the development of the requisite applications such as infrastructure, institutional arrangements, and human capital that would support ICT applications to assist in national development needs, priorities and strategies. Details of the ICT policy are discussed in Chapter five.

2.13.3 Telecommunications infrastructure

According to the Swaziland Government (2007) the country's telecommunication network is fully digital and accessed all around Swaziland and internationally. An Internet gateway was introduced in the year 2000 and this allowed direct international Internet connections. In 1998 MTN, a mobile telephone company launched a network to allow the use of mobile phones. The MTN network coverage is in excess of 80 percent of the country's geographical area. Other forms of communication include: radio, television, magazines, and newspapers. The public communication component of the infrastructure comprises of the following: 40 000 fixed telephone lines, 70 000 mobile subscribers and an unknown number of personal computers (PCs). According to the Internet world stats (2008) there are 42 000 Internet users

in the country which constitute 0.1 percent Internet users in Africa. The Internet user growth from year 2000 to year 2008 is 320 percent. The Internet penetration rate stands at 3.7 percent. "Telecommunications services are comparatively more affordable in the Kingdom than elsewhere in Africa and the world" (Swaziland Government 2007).

To support this assertion, Oyomno and Ramatlhape (2004: 14) stated that in Swaziland there is a strong ICT application environment in government comprising over 60 different systems running in a mainframe environment and supported by a combination of local and wide area networks. Oyomno and Ramatlhape (2004: 14) noted that the original slow pace of uptake of Internet-based electronic mail and web services has changed. In the year 2003, a government website was launched and all ministries and departments are email connected.

2.13.4 ICT Infrastructure in government

Oyomno and Ramatlhape (2004: 15) noted that the government network component of the ICT infrastructure comprises of a wide area network (WAN) that spans the country, local area networks (LANs) located mainly in ministries and departments, and a limited but rapidly growing Internet service. Oyomno and Ramatlhape (2004: 16) observed a limited use of the full capacity of the government WAN and that ICT access and penetration in the Kingdom are very limited.

According to Oyomno and Ramatlhape (2004: 15) the government uses an IBM mainframe computer system. The mainframe runs a VSE operating system and is located at the Ministry of Finance from where it is linked to all government ministries and departments via the WAN. All major government applications run on the mainframe applications. Government officers in Mbabane, Ngwenya, Manzini, Piggs Peak, Nhlangano, Lavumisa, Siteki, or Mankayane are able to log on and run their applications online and in real-time. In other words, all the computer systems linked to the mainframe from these remote sites operate as client PCs to the mainframe computer system.

Oyomno and Ramatlhape (2004: 15) further stated that the government ICT network technically comprises of seven Compaq DL 380 servers, two of which provide Internet connectivity and the remaining five support the WAN. The servers are linked through a

10 mbps Ethernet backbone to which the rest of the network is hooked through different technologies that include: VSAT (very small aperture terminal/segment), radio links, fibre optic and ISNS lines and gateways. Consequently, the WAN is partitioned into the following three segments based on the technology used to provide conectivity:

- The VSAT uses satellite technology to connect government offices in Piggs Peak, Mankayane, Siteki, Nhlangano, Manzini, Lavumisa and Ngwenya to the host mainframe computer system located in the computer services department in Mbabane.

- The fibre optic segment uses fibre optic technology to connect mainly government ministries located in Mbabane to the host computer system. The government offices linked through this technology include the following: Police, Income tax, Public Works, Fire, Agriculture, Treasury, Statistics, Education, Health and Justice.

- The radio segment uses wireless technology to connect government offices to the central host computer system. The offices that this segment serves include Geology, Cabinet, Customs, SBIS, CTA, Central Bank of Swaziland, Foreign Affairs, DPM, Enterprise and Employment, Police Regional Headquarters and the Anti Abuse Corruption Unit.

The Finance segment also uses wireless technology to connect to the central host computer system, the High Court, Correctional Services, Lilunga house and the Hospital.

To achieve this connectivity as pointed out in Oyomno and Ramatlhape (2004: 16) the network uses 18 gateways and the TCP/IP protocol. Capacities of 11 mbps, 4 mbps and   2 mbps are used.

The Internet service component of the network as observed in Oyomno and Ramatlhape (2004: 16) comprises of one web server running on Windows 2000 SP2 and a DNS (domain name service) server running on Red Hat Linux 1.1. Access to these servers is obtained through a Cisco switch and Cisco Pix Firewall.

Oyomno and Ramatlhape (2004: 14) stated that the LAN components of the network are mainly ministerial and departmental. There are plans to replace all hubs with Cisco switches as the use of hubs is becoming increasingly problematic.

The maintenance of the government network is outsourced to Comparex (PTY) Ltd. The company supports and maintains servers and routers on a time and material basis.

According to Oyomno and Ramatlhape (2004: 14) the Government of Swaziland suffers from an unsatisfactory slow access to the Internet by computers due to shortages of bandwidth. This situation is not unique to Swaziland. Mutula (2005) argued that most countries in Africa suffer from inadequate bandwidth.

Zwane (2007) reporting for the *Swazi observer* stated that the Swaziland Post and Telecommunications Corporation (SPTC) plans to introduce broadband in the Kingdom soon so as to catch up with the latest global communication trends. The broadband is often called high-speed Internet because it usually has a high rate of data transmission. The information was gathered from a meeting between government officials and a delegation from the Development Bank of Southern Africa (DBSA) which had visited the country to discuss a way forward in the implementation of a turnaround strategy for the corporation, following a risk assessment exercise. Also, it envisaged that the strategy would enable SPTC to run Swaziland's communications business more efficiently for the benefit of all its citizens, through the overriding customer focus. Regarding the initiative noted from the literature above, it seems like the government is trying to create an enabling environment for e-government in the Kingdom.

Abissath (2007) cited in Mutula (2008: 248) observed that for e-government to be effectively implemented, the following infrastructure and services are needed:

- National information infrastructure as a backbone for e-government services delivery

- Physical infrastructure that consists of Internet access points in convenient places such as public libraries, government offices, tinkhundla access portals, shopping malls, public places and many more for the citizen to use free of charge

- Technology infrastructure made up of computers, servers, networks (broadband and wireless), mobile devices

- E-government legislation and policy

- An e-government strategy

- E-government services that consist of portal that enables citizens to ask questions and receive answers for example payment of taxes and fines and

- Issuance and renewal of driver's licenses.

2.13.5 ICT expertise in government

Three broad categories were noted by Oyomno and Ramatlhape (2004: 26) with regard to ICT expertise in government: ICT specialists and professionals, specialist ICT users, and for lack of a designation, the third category was referred as 'champions' or 'drivers'. Regarding ICT specialists and professionals; they are based in the Computer Services Department (CSD). CSD has an in-house staff complement of 65 of whom 52 have technical and professional training in computer related disciplines, and the remaining 13 perform administrative and financial support functions.

On ICT users in government, Oyomno and Ramatlhape (2004: 14) noted a new and emerging category of experts in various ICT application environments. Although the number of specialist ICT users in government is small and could not be ascertained, evidence of their presence and the important contribution they make in expanding the scope of ICT applications beyond conventional information systems, was found. The specialists as reflected in Oyomno and Ramatlhape (2004: 14) are presently confined to their respective ministries and departments.

On the issue of technological application champions, Oyomno and Ramatlhape (2004: 14) stated that the officers with technology application championship skills and capabilities occupy relatively senior leadership positions in government from which they drive ICT

applications to support programmes under their responsibilities. These officers demonstrate exceptional understanding of the potential beneficial capabilities of ICT to improve government efficiency, effectiveness and responsiveness and strive to accomplish just that.

However, the Swaziland Government as observed by Oyomno and Ramatlhape (2004: 14) struggles to attract and retain a sufficient number of ICT professionals and this is a major constraint to the development and implementation of e-government. This situation is not unique to the Swaziland Government, but is a widespread problem for a number of governments worldwide. For example, Ngulube (2007: 5), as earlier noted in Section 2.12 noted that human resources are scarce with regard to the development and implementation of e-government due to brain drain and lack of capacity building programmes in Africa.

2.13.6 Ongoing e-government initiatives

Oyomno and Ramatlhape (2004: 37) noted the government website project, population register, criminal justice system and the personal identification system as ongoing programmes and projects that qualify to be considered as e-government initiatives:

2.13.6.1 Government website project

The development of a government website started in 2002 and was completed in early 2003. The website was officially launched in February 2003 by the Prime Minister. This achievement as noted by Oyomno and Ramatlhape (2004: 37) marked an important milestone in the development of e-government capability in the Kingdom, in that it established its unique identity and presence in the emerging Internet world (http://www.gov.sz). Before this, any information on the government of the country could only be obtained from www.swazi.com/government, or from other websites, such as the *CIA: world fact book.*

2.13.6.2 Population register

According to Oyomno and Ramatlhape (2004: 37) the population register and criminal justice system project has features that qualify it to be an e-government initiative. The first of these is the population register that is undergoing conversion into an electronic form. As a national

reference database, the population register is a source of baseline information for all national development programmes, be they in education, health, housing, employment, water and sanitation or in small business development in rural communities.

2.13.6.3 The criminal justice system

Oyomno and Ramatlhape (2004: 37) observed that the criminal records system (CRS) is another feature that qualifies to be an e-government project. When it becomes fully operational, the CRS will enhance considerably the investigative capacity of the police department.

2.13.6.4 The personal identification system

According to Oyomno and Ramatlhape (2004: 37) the personal identification system is used to generate national identity cards for citizens and to update and maintain the population register.

2.13.6.5 Public sector management programme (PSMP)

Oyomno and Ramatlhape (2004: 37) stated that the PMSP had a mandate to develop clear and appropriate ministerial mission, objectives, strategies and staffing levels. It was also the responsibility of the PSMP to identify areas where government involvement needs to be reduced or is found to be inappropriate, and to increase participation in private sector, non-governmental organisations and individuals in the provision of services.

In addition, the country launched a Decentralization policy in August 2005. The scope of the policy covers e-government with particular emphasis on the use of Management Information Systems for enhancing and ensuring quality and timely service delivery, management, monitoring and evaluation. According to the country's Swaziland Government (2005: 2) the Computer Services Department shall play a key and strategic role.

> The main purpose of the policy is to provide an enabling environment for promoting and enhancing sustainable and participatory local and national economic, political and

social development within a decentralized governance framework and is based on the fundamental principles of subsidiary, empowerment, responsibility, partnership, connectivity, accountability, transparency, equity, inclusiveness, responsiveness, efficiency, effectiveness, participation, consensus, democratic representation and respect for the rule of law (Swaziland Government 2005: 2).

At the swearing in ceremony of the recently appointed cabinet ministers in Swaziland, Dlamini (2008) reporting for the *Swazi observer* stated that the Prime Minister Dr Barnabas Sibusiso Dlamini's speech noted that "as per requirements of the constitution, government needed to take services to the people, closer to where they live. We shall effectively and efficiently operationalise the government's Decentralisation policy".

Recent developments in Swaziland in terms of e-government development include the establishment of the Ministry of Information Communications Technology. Mavuso (2008: 4) reporting for the *Times of Swaziland* stated that the newly formed Ministry of Information and Communications Technology is made up of three broad departments. These departments are as follows: 1. Department of Information that is responsible for information technology (sectoral support, development, regulation and management), media (sectoral support, development, regulation and management), accreditation of foreign media houses, filming accreditation, licensing and regulation, regulation of publications (including electronic publication), National Library Services and National Archives. 2. Department of Communications that is responsible for broadcasting-radio, television, and Internet (policy development, licensing and regulation), postal service policy, and regulation and telecommunications services policy and regulation. 3. Government Computer Services Department that is responsible for government computer services and co-ordination of all research and technology development interventions in the country.

2.13.7 Benefits of e-government for the Swazi citizens

E-government as observed by Oyomno and Ramatlhape (2004: 40) provides information and services to the people cheaply, efficiently and effectively. E-government can systematize the transparency of governance and provide relevant and timely information in large quantities. According to Oyomno and Ramatlhape (2004: 40) e-government holds the promise of

empowering the Swazi citizens to participate actively and productively in the emerging knowledge economy.

Tinkhundla as reflected by Oyomno and Ramatlhape (2004: 18) occupy a unique position in the Kingdom, as they are a point of access between the King and his subjects. Each of the 57 Tinkhundla distributed throughout the four regions of the Kingdom provides a natural site for ICT-enabled access to government services. Using Tinkhundla to provide electronic access to government services would eliminate most of the costs associated with the establishment of a service access portal. Each Inkhundla has structures in place already, and most of them have electricity and telephone lines installed.

Oyomno and Ramatlhape (2004: 18) noted that to set up a service access point would only require the necessary equipment, connectivity to the Internet, and training. Apart from providing a national access to government services, the Tinkhundla system would provide a convenient meeting point between indigenous and modern government systems and structures. It can also serve as Internet cafes to provide universal access to citizens. Citizens will be able to go onto the Internet to surf, send cellular phone messages and email. According to Oyomno and Ramatlhape (2004: 18) a nominal subsidised fee could be set to promote sustainability.

2.14 Summary

The purpose of the review of literature was discussed at the beginning of this chapter. The chapter went on to discuss briefly each of the following topics as they relate to e-government: policy issues, national ICT policy, the importance of technology on e-government, the implications of e-government on financial and other related costs, approaches to e-government development, challenges and threats to e-government, critical success factors for e-government, measures of success/failures of e-government and monitoring evaluation of e-government programmes. This chapter also presented a summary of the literature that gives a general overview of e-government in the world, the situation in Africa, and the view from Swaziland. On Swaziland, this chapter covered various aspects relating to e-government: namely, background information on the country, policy issues, telecommunication

infrastructure, ICT infrastructure in government, ICT expertise in government, ongoing initiatives and benefits of e-government for the Swazi citizens.

Chapter three

Research methodology

3.0 Introduction

According to Leedy (1997: 104) research revolves around two major approaches, namely quantitative and qualitative, and this study adopted the former. The quantitative approach as reflected by Leedy (1997: 106) is capable of describing, predicting and explaining social phenomena. It was upon this premise that the quantitative approach would benefit the present study in assessing the state of e-government in Swaziland with special reference to government ministries and departments.

3.1 Research strategy

The study used the survey research strategy. According to Babbie and Mouton (2001: 83) there are three main research strategies; experiments, surveys and case studies. The survey research strategy was chosen because the objective was to describe, compare, contrast, classify, analyse and interpret the findings on the state of e-government in Swaziland.

3.2 Data collection techniques

The techniques for data collection were an interview schedule, an administered questionnaire and a website evaluation form. Babbie and Mouton (2001: 259) noted that an interview schedule and an administered questionnaire seem to have fewer limitations, for instance they have a higher completion rate when compared to the other techniques, such as the mail questionnaire.

3.2.1 Interview schedule

Interviews are one method by which a phenomenon may be studied. Interviews, as stated by Silverman (1993: 92), can be used for gathering facts and explanations. Although interviews can be time-consuming, Burton (2000: 323) noted that they have been characterised as the

most effective way of enlisting the co-operation of most populations. The quality of data as observed by Burton (2000: 323) is usually superior to that obtained by other methods. The interview schedule was prepared for the director of computer services as the officer knowledgeable on e-government issues in Swaziland at the national level (See Appendix 2).

3.2.2. Questionnaire

A questionnaire, as stated in Slater (1990: 75), is the most commonly used research instrument and can be a reliable source of research data. Babbie and Mouton (2001: 233) noted that a typical questionnaire has statements and questions. The use of statements and questions as stated in Babbie and Mouton (2001: 233), give researchers more flexibility in the design of the research instrument and can make the research instrument interesting as well. For example, a questionnaire can include the likert scale and multiple-choice items. A questionnaire, as reflected in Ngulube (2003: 205), enables each respondent to give answers to the same set of questions and statements in a predetermined order in the absence of the researcher. By presenting all respondents with the same standardized questions, Robson (1993: 126) observed that a high reliability of response can be achieved. Like any other research instrument, questionnaires have limitations. Bernard (2000: 233) stated that although questionnaires can have reporting errors and completion of the questionnaire by the wrong person, they are still the most popular instrument for data collection in social research. The questionnaire was administered to the officers in charge of e-government initiatives in the relevant ministries and departments of government in Swaziland as they were the key sources of data at ministerial/departmental level (See Appendix 1).

3.2.3 Website evaluation

To establish the content and maturation level of the different aspects of the government website, a website evaluation form was used. All 23 units of analysis that were identified in the Swaziland Government website were interrogated (See 3.3 below). According to the United Nations (2002: 21) website evaluation should be used in conjunction with other assessment and benchmarking activities that complement its value. The United Nations (2002: 21) stated that when perfected, website evaluation can be useful in fulfilling governance goals such as improved planning and setting of goals for e-government

initiatives, improved decision making and resource allocation related to e-government programmes, determining the effectiveness of an e-government website and improving public information access services of those websites. UNESCO (2005) commented on this when noting that the monitoring and evaluation of e-government projects involve an assessment of the usability of government portals/websites. The webpages in the government website were evaluated for the presence of various features dealing with information availability, service delivery, and public access. In looking at specific features of the government website, the study intended establishing the amount of material available that would inform citizens. The study used the United Nations (2002: 67) standard website evaluation form to examine the presence of a number of features such as: online publications, online databases, audio clips, video clips, security features, privacy policy, email address, comment form, disability access, user payments, and non-native languages or foreign language translation. This form was applicable to the Swaziland context (See Appendix 3).

3.3 Population of the study

The population of the study was the government ministries and departments which made 23 units of analysis. According to Leedy (1997: 211) there is little point in sampling a population that is less than 100. Therefore, no sampling was involved in the study. The ministries and departments that were surveyed were: King's office, Prime Minister's office, Deputy Prime Minister's office, Ministry of Tourism, Environment and Communications, Home affairs, Foreign affairs, Economic planning, Education, Parliament, Enterprise and employment, Public service, Finance, Health and social welfare, Housing and Urban development, Natural resources, Public works, Agriculture and Cooperatives, Computer services, Broadcasting and information services, Central statistical office, Correctional services, Police and Justice and Constitutional affairs.

3.4 Ethical considerations

The research was conducted in English, the language shared by both the researcher and the participants. This ensured that the accuracy of meaning was optimised. The participants were informed from the outset about the nature and the purpose of the study. The issue of voluntary participation was stated so that the participants would take part in the study

willingly, thus enhancing the quality of information provided. Participants were assured that the information given would be treated as confidential and were not obliged to disclose their names or staff numbers. They were also informed of their right to withdraw at any point of the study, for any reason, and without any prejudice, and the information collected was to be turned over to them. Participants were assured that there were no known risks from being in the study.

3.5 Administering the questionnaire and conducting the interview

Participants were contacted individually through phoning and office visits to introduce the study and its purpose. They were left with the choice to take part in the study or not to take part in the study. The researcher left his contact details so that participants could contact him to inform him of the decision to take part or not in the study. Only when this was done, were appointments scheduled to administer the questionnaire and the interview schedule. The interview was conducted in the interviewee's office in a face-to-face situation. After the interview, the interviewer presented the answers to the respondent in order to clear any misconceptions on the part of the interviewer of what the respondent would have said. All participants with the exception of one took part in the study willingly. The one participant who ended up not taking part in the study had to embark on an urgent overseas official assignment.

3.6 Method of analyzing the data

The survey data collected through the questionnaires was evaluated and cleaned before coding. The purpose of data evaluation was to check for ambiguity, completeness, comprehensibility, internal consistency, relevance, and reality. Babbie and Mouton (2001) advised that completed questionnaires should be assigned a unique number as this facilitates checking the data for errors. The data was then analyzed using SPSS version 15.0 for Windows for statistical processing. The advantages advanced by various authors about computer processing are that it speeds up processing and analysis of data as well as saving and eliminating a good deal of tedious and repetitive work.

3.7 Presentation of results

For better visual representation, some of the results were presented in the form of tables. (See the following chapter.)

3.8 Evaluation of the methodology

Social scientists as stated by Babbie and Mouton (2001: 100) use a variety of research designs. Each design has its strengths and weaknesses in terms of its appropriateness in studying certain concepts. According to Sproull (1995) cited in Ngulube (2003: 235) there is no one type of research design that is better or worse than any other. This study as reflected in Section 3.1 of this Chapter used the survey research strategy. The survey research strategy was chosen because the objective was to describe, compare, contrast, classify, analyse and interpret the findings on the state of e-government in Swaziland with special reference to government ministries and departments. The goal was to assess the extent to which the Swaziland Government has responded to the challenges and the progress made regarding the potential priority initiatives pertaining to e-government in the country as outlined in the work of Oyomno and Ramatlhape (2004: 45).

One notable advantage of the survey research strategy as stated by Babbie and Mouton (2001: 263) is its flexibility. Many questions may be asked on a given topic, giving considerable flexibility in the analysis of a particular set of data. Survey research also has several weaknesses as noted by Babbie and Mouton (2001: 263). The Survey research strategy as reflected by Babbie and Mouton (2001: 263) is generally weak on validity and strong on reliability. The weakness in validity of the survey research methodology emanates from its artificiality as observed by Babbie and Mouton (2001: 263). For example, "finding out that a person gives conservative answers does not mean the person is conservative" (Babbie and Mouton 2001: 263). Non-response is also cited as one of the handicaps associated to the survey research strategy.

One of the pre-requisites of using questionnaires and interviews as stated by Babbie and Mouton (2001: 236) is making sure that respondents and interviewees are capable of giving reliable responses. It was fortunate that all the respondents and the interviewee were well

versed in issues pertaining to e-government in their ministries/departments. This could be attributed to the fact that almost all the respondents were part and parcel of the e-government task team that was entrusted with the responsibility of formulating the ICT policy for Swaziland.

3.8.1 Reliability and validity

According to Babbie and Mouton (2001:119) reliability is the degree to which a test consistently measures what it sets out to measure while at the same time yielding the same results. Ngulube (2003: 204) observed that it is in quantitative approach instrumentation that data and findings are controllable, predictable, consistent and replicable. Therefore, in order to get consistent answers to consistent questions, questionnaires were designed to collect the data for the survey.

Regarding validity, Babbie and Mouton (2001:119) stated that it is the degree to which a measure does what it is intended to accomplish. Pre-testing the questionnaire was used as a tool for content validation. The questionnaire was pre-tested on the academics and post-graduate students at the University of KwaZulu-Natal (UKZN) (Pietermaritzburg campus). Content validation was achieved by making sure that the questionnaire items were related to the questions the study set out to answer. Criterion validity was achieved by comparing the instruments of measurement to those published in the literature for example, the United Nations e-government benchmarks.

Regarding the interview, Cohen, Manion and Morrison (2000: 120) noted that validity is a persistent problem in interviews. For instance, validity can be compromised by asking leading questions. Leading questions were avoided in the interview schedule because they tend to influence the answers of the respondent.

In general with the explanation given above regarding the research design and procedure that was followed for data collection and analysis, the researcher was convinced that the whole process provided valid and reliable research results.

3.9 Summary

This chapter explained how the study was conducted, that is, what was done in order to collect data to answer the research question. Its aim was, amongst other reasons, to help other researchers replicate the study if need be. The following chapter presents the results of the study.

Chapter four

Presentation of results

4.0 Introduction

The previous chapter explained how the study was conducted, that is, what was done in order to collect data to answer the research questions. Its aim was, amongst other factors, to help other researchers replicate the study if need be.

This chapter presents the data obtained from the population of the study, while the next chapter is devoted to the interpretation and discussion of the results of the study. The objective of this chapter is to transform raw data into some meaningful facts. It is worth noting that it was evident from the data collection process that the participating respondents were well versed in the issues of e-government in their ministries/departments. This observation as reflected in Section 3.8 of Chapter three could be attributed to the fact that almost all the respondents were part and parcel of the e-government task team that was entrusted with the responsibility of formulating an ICT policy for the country. The survey population was quite small and the study was able to attain a 96 percent response rate, that is 22 out of 23 respondents.

The data that is presented in this chapter is not associated with any particular ministry/department. To encourage full and frank participation, respondents were promised that their ministries/departments would not be individually identifiable (see Appendix two). The data presented in this chapter was obtained from questionnaires, an interview schedule and observation (website evaluation).

The results are organized according to the themes of the research issues that were raised in section 1.2 of Chapter one. Some of the findings are presented in tables. According to Locke, Silverman and Spirduso (1998: 173) tables are suited for displaying primary findings. The tables displayed the values of the results in numerical form.

4.1 The state of e-government in Swaziland with special reference to government ministries and departments

The data presented in this section is from the variables that were measured to assess the state of e-government in Swaziland with special reference to government ministries and departments. Results relating to e-government policy, e-government strategic plan, e-government programme, mission statements, senior government officials' perceptions of the state of e-government, special initiatives to close the digital divide, and the content and maturation level of the different aspects of the government website in Swaziland are presented.

4.1.1 E-government policy

From the interview schedule, the respondent was requested to state if the country has formulated an e-government policy. In response the respondent stated that the country has not yet formulated an e-government policy, but at the moment e-government issues were being directed by the country's ICT policy. No time frame was given as to when the e-government policy would be in place.

4.1.2 E-government strategy

Regarding e-government strategy, the study established from the interview that the country has not yet formulated the said strategy. Also, no time frame was given as to when the e-government strategy would be in place.

4.1.3 E-government programme

In this regard, the respondent was requested to state if the country does have an e-government programme. In response the respondent stated that the country does not have a single e-government programme in place, but a series of programmes pertaining to e-government are being implemented by government. No time frame was given for completion of the said programmes. These programmes which double as "special initiatives" are listed in Section 4.1.6 of this chapter.

4.1.4 Mission statement

The respondents to the survey questionnaire were asked if they had mission statements for their ministries/departments. As can be seen in Table 1 below all 22 (100%) respondents stated that they had mission statements for their ministries/departments.

Table 1: Availability of mission statement (N= 22)

Mission statement	Frequency	Percent (%)
Yes	22	100
No	0	0

This kind of information was necessary because it enabled the researcher to establish the relevance of the information posted on a particular ministry/department webpage. It was also to ascertain if the mission statements mentioned anything regarding ICTs or e-government. The mission statements of the various ministries/departments were perused and it was found that only two (9%) of the ministries/departments statements mentioned issues regarding ICTs and no statement mentioned anything on e-government.

4.1.5 Perceptions on e-government

Respondents were requested to rate the priority level of their ministry/department's commitment on e-government issues using a likert scale that includes very high, high, neutral, and low. Twelve (54.5%) respondents reported that e-government activities in their ministries/departments were of high priority. The results are presented in Table 2.

Table 2: Ministry/department's prioritisation of e-government (N=22)

Priority	Frequency	Percent (%)
Very high	4	18.2
High	12	54.5
Neutral	3	13.6
Low	3	13.6
Total	22	100

Twelve (54.5%) respondents elaborated on this aspect. These respondents felt that it was necessary for the government to go beyond providing information about government ministries/departments and services to providing services via the Internet. Three (13.6%) respondents were of the opinion that the computer services department should be decentralised like in other SADC countries so as to remove the "bottlenecks" and unnecessary "red-tape".

A further three (13.6%) respondents noted that for e-government to be successful in Swaziland, government has to form strategic partnerships with countries that have been successful in implementing e-government and with the service providers, for instance, Swazi MTN (the only mobile cellular network company operating in the country) and the Swaziland Post and Telecommunication Company. Four (18.2%) respondents felt that all these stakeholders should work together to tackle the connection problem in order to find possible ways of reducing the high communications/connection costs. Three (13.6%) respondents perceived that once the cost of connection is resolved the challenge of reaching the rural areas such as schools and hospitals would be a thing of the past. The country could then begin to realize the full benefit of e-government.

4.1.6 Special initiatives to close the digital divide

From the interview schedule the study established the following "special initiatives" that are being instituted by government to close the digital divide: assistance programmes for the less privileged, awareness through the media to reach rural areas, and awareness programmes to meet the special needs of citizens. Unfortunately, the researcher was unable to get the

description of these initiatives in terms of what they entail. Further to the interview schedule the respondent stated that the Department of Computer Services is currently working on an ICT Master System Plan for the government that shall be used in streamlining the computerisation of government and assist with budgetary requirements. There is also an effort towards addressing the issue of ICT legal frameworks which are presently not available in Swaziland.

4.1.7 Availability of webpage

Table 3 shows that with the exception of one, all the ministries/departments have their own webpage within the government website.

Table 3: Availability of webpage (N=22)

Webpage	Frequency	Percent (%)
Yes	21	95.5
No	1	4.5
Total	22	100

4.1.8 Availability of an intranet

The respondent from the interview schedule disclosed that although government ministries/departments do have an intranet, this facility is only used by a few. Therefore, it came as no surprise that some respondents thought their ministries/departments were not connected to an intranet. Table 4 shows those ministries/departments that have an intranet connection.

Table 4: Availability of an intranet in the ministry/department (N=22)

Intranet	Frequency	Percent (%)
Yes	12	54.5
No	10	45.5
Total	22	100

4.1.9 Actions taken by the ministry/department to increase citizen use of the Internet

Regarding the actions that have been taken by ministries/departments to increase citizen use of the Internet, 10 (45.5%) respondents stated that they were not sure if any action had been taken. This response should be treated with caution since these respondents were senior officers who are also members of the e-government task force. This result should be taken as a diplomatic way of saying no action has been taken as yet. Table 5 summarises the responses.

Table 5: Actions taken by the ministry/department to increase citizen use of the Internet (N=22)

Other initiatives	Frequency	Percent (%)
Not sure	10	45.5
Training in government website management	4	18.2
National public information campaigns	4	18.2
Financial assistance to local government for e-government	2	9.1
Government sponsored training programmes for the public	2	9.1
Total	22	100

4.1.10 Content and maturation level of the different aspects of the government website

To establish the content and maturation level of the different aspects of the government website, the website was evaluated for the presence of various features dealing with information availability, service delivery, and public access. In looking at specific features of the government website, the study intended establishing the amount of material available that would inform citizens. The study used the United Nations (2002: 67) standard website

evaluation form to examine the presence of a number of features such as: online publications, online databases, audio clips, video clips, security features, privacy policy, email address, comment form, disability access, user payments, non-native languages or foreign language translation. This form was applicable to the Swaziland context at the time of conducting the research (See Appendix 3). Table 6 summarises the findings of the website evaluation exercise.

Table 6: Website evaluation

Variable	Yes	No
1. Availability of government website	✓	
2.Webpage links to all ministries/departments	✓	
3. National e-govt strategic plan available online		✖
4. Laws, bills, judicial decisions downloadable	✓	
5. Availability of contact details online	✓	
6. Access to specialized databases		✖
7. Site multi-lingual		✖
8. Search features easy to use and accurate	✓	
9. Website offers feedback	✓	
10. Availability of security feature		✖
11. Availability of e-application forms	✓	
12. Download and print forms or applications	✓	
13. Ability to make		✖

appointments with officials online		
14. Payment of tax obligation online		✘
15. Payment of fines online		✘
16. Payments done with credit cards, debit cards		✘
17. Published information includes: official govt reports, newsletters, press releases and critical topic	✓	
18. Documents in PDF format		✘
19. Participation in chat rooms		✘
20. Acceptance of digital signatures		✘
21. Website links to private sector sites	✓	
22. Website links to advertisement of any kind	✓	
23. Website offers streaming media		✘
24. Website offers push technology		✘
25. The content of the website predominantly informational	✓	
26. Website interactive		✘
27. Website transactional (pay for services online)		✘
28. Content updated		✘

frequently (weekly)		
29. Content updated regularly (monthly or bi-monthly)		✖
30. Content seldom updated (six months or longer)	✓	
31. Privacy policy on-line	✓	
32. Disability access		✖

From the results above it is evident that most of the aspects expected to be found in any national government website are still lacking within the Swaziland Government website. Only 15 (46.9%) aspects of a fully functional e-government website are present. There is no doubt that such a scenario hinders the country from realizing the "full benefit" of e-government. The website is basically informational and static. The content of the website is seldom updated. To support this assertion, some of the ministries/department webpages still reflect cabinet ministers that were long reshuffled. Such a scenario compels the maturation of the government website to remain at the very first stage of the e-government model. This result confirms the responses from the respondents of the study whereby 12 (54.5%) indicated that the update of their ministry/departments webpages is dependent on the need and availability of new material and only two (9.1%) respondents stated that their webpages were updated on a daily basis. Table 7 summarises the responses.

Table 7: Webpage update (N=22)

Webpage update	Frequency	Percent (%)
Depends on the availability of new information	12	54.5
Daily	2	9.1
Weekly	4	18.2
Monthly	4	18.2
Total	22	100

4.1.11 Condition of the ministry/department webpage

Fifteen (68.2%) respondents confirmed that their ministry's/department's webpages contain basic information and that the information is infrequently changed. Table 8 summarises the results.

Table 8: Condition of the ministry/department web-page (N=21)

Condition of webpages	Frequency	Percent (%)
Basic webpage with some static material infrequently changed	15	71
Ministry/department publishes extensively on the webpage and provides forms for downloading	6	29
Total	21	100

4.1.12 E-government oversight in ministries/departments

Regarding e-government oversight in the ministries/departments of government, all 22 (100%) respondents stated that e-government is coordinated by the Department of Computer Services. Fifteen (68.2%) respondents felt that e-government activities are too centralized, thus making it very difficult for ministries/departments to make some advances in terms of improving and upgrading their webpages.

4.1.13 Decision making on webpage content

Regarding decision making for placing specific content and information online for ministries/departments, 21 (95.5%) respondents stated that the final decision lies with the controlling officers who are the principal secretaries in the case of Swaziland. This question was asked as it was necessary to determine who had control over the information that was placed on the webpage given the importance of avoiding misleading information being placed on the site. The question was also asked to establish the involvement of senior personnel in the whole process. Table 9 summarises the results.

Table 9: Decision making on webpage content (N=21)

Decision making	Frequency	Percent (%)
Principal secretary	20	95.5
Chief information officer	1	4.5
Total	21	100

4.1.14 Budget allocation for e-government

Regarding budgetary allocations for e-government activities in government, the Department of Computer Services is given E47 million[2] annually. This amount includes funding for capital projects that run over a period of three years. At ministerial/departmental level, 12 (54.5%) ministries/departments also allocate some funds towards promoting e-government activities as they consider the services from Computer Services to be inadequate. This was an interesting finding indeed, because it shows that some stakeholders within government are well aware of the benefit of e-government and they can no longer wait for the Department of Computer Services to spearhead the processes for them. However, this study established that such initiatives are perceived by some authorities to be a threat to the security of the country as the Department of Computer Services can no longer regulate such activities. Table 10 shows the varying amounts of money being allocated by these ministries/departments for e-government.

Table 10: Budgetary allocations for e-government in ministries/departments (N=22)

Budget	Frequency	Percent (%)
Below E50 000	8	36.4
E 50 001 and above	4	18.2
No response	10	45.5
Total	22	100

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[2] E (Emalangeni)- Swaziland currency: E1 equivalent to R1.

This aspect attracted a high non-response rate because most ministries/departments are dependent on the services provided by the Department of Computer Services. The Department of Computer Services has the central control over e-government activities in the Swaziland Government.

4.1.15 Factors hindering e-government development in ministries/departments

Regarding the factors that are hindering e-government development in the ministries/departments, respondents were requested to select those that they regarded to be the most challenging. Eleven (50%) of the respondents noted that the absence of a coordinated e-government strategy was a major challenge to the development of e-government in the country. It was evident from the interview that the country also suffers from limited availability of financial resources, lack of trained public sector IT staff (brain drain), and Internet access limitations. This information was necessary because it would assist with the compilation of the recommendations that could quicken e-government implementation in Swaziland. Table 11 summarises the results.

Table 11: Factors hindering e-government development in ministries/departments (N=22)

Factors	Frequency	Percent (%)
Absence of a coordinated government strategy	11	50
Lack of technology/trained public sector IT staff	4	18.2
Limited financial resources	3	13.6
Internet access limitations	3	13.6
Lack of support from parliament	1	4.5
Total	22	100

4.1.16 ICT activities being outsourced by the ministries/departments

In this regard respondents were requested to indicate the ICT activities that were being outsourced by their ministries/departments. The results presented in Table 12 below summarises the responses of the respondents.

Table 12: ICT activities being outsourced (N=22)

Outsourced programmes	Frequency	Percent (%)
Network architecture	12	54.5
Webpage development	4	18.2
Not sure	4	18.2
Human resources training	2	9.1
Total	22	100

4.1.17 Summary

This chapter dealt with the analysis and presentation of the findings from the data obtained from the field survey. Though the priority on e-government activities was rated high in a majority of ministries and departments, and major initiatives had been launched to create a favourable environment for e-government, the country still lacks an e-government policy, a coordinated e-government strategy, and an e-government programme. Content and maturation level of the different aspects of the government website are at the lowest levels of the e-government model, e-government activities are too centralised, budgetary allocations to e-government activities seem to be inadequate, there is limited Internet connection, and most ICT services are being outsourced but not by all ministries/departments. The country also lacks many ICT elements (let alone e-government). The next chapter presents the discussion and interpretation of the results of the survey that were presented in this chapter. The main trend and patterns in the data are discussed with reference to the research questions outlined in Section 1.2 of Chapter one.

Chapter five

Discussion and interpretation of results

5.0 Introduction

This chapter presents a discussion and interpretation of the results of the survey that were presented in Chapter four. The main trends and patterns in the results are discussed with reference to the research questions outlined in Section 1.2 of Chapter one. The general purpose of the study was to assess the state of e-government in Swaziland with special reference to the government ministries and departments. The research questions were as follows:

1. What are the policies regarding e-government in Swaziland?
2.   How appropriate are the e-government policies in Swaziland?
3. What are the senior government officials' perceptions of the state of e-government in Swaziland?
4. What initiatives have already been launched regarding e-government in Swaziland?
5. What is the content and maturation level of the different aspects of the Swaziland Government website?
6. What recommendations can be made based on the findings of the study?

5.1 The state of e-government in Swaziland with special reference to government ministries and departments

The survey questionnaire, interview schedule and website evaluation that were carried out enabled the research to establish the extent to which the Swaziland Government has responded to the challenges and the progress made regarding the priority initiatives pertaining to e-government in the country. The evidence in Table 2 shows that e-government issues are given high priority in Swaziland. However, despite this evidence of prioritizing e-government issues in the country, the research identified a number of factors that might hinder the implementation of e-government in Swaziland. These and other factors are discussed in the following sections.

5.1.1 The policies regarding e-government in Swaziland

Regarding the policies pertaining to e-government in Swaziland, the findings are discussed in relation to e-government policy, e-government strategy, e-government programme and ICT policy.

5.1.1.1 E-government policy

E-government policy has not yet been formulated in Swaziland. It was established from the interview schedule that the country is in the process of developing an ICT Master System Plan. Among the expected outputs of the ICT Master System Plan is an e-government policy. As stated in Section 1.1 of Chapter one, Lam (2005) noted that the absence of a detailed e-government policy had a decelerating effect on e-government initiatives: "Until such e-government policy had been fully conceived, government agencies would be hesitant to speed ahead with the development of new e-government applications and technology" (Lam 2005).

When considering some examples from the region, in Section 2.3.2 of Chapter two Trusler (2008:2) noted that the Department of Public Service and Administration (DPSA) drafted South Africa's e-government policy in 2001 after an extensive two year consultation process with various private representatives, community organisations and public service officials. According to Trusler (2008: 2) the South African e-government policy outlines a ten year implementation plan for implementing e-government in South Africa. According to Trusler (2008: 2) the implementation plan draws on tested worldwide practices and seeks to avoid the mistakes, and improve on the successes of other governments implementing e-government initiatives. If Swaziland has problems with regard to developing its own e-government policy, it is evident that the country could borrow from the South African example.

5.1.1.2 E-government strategy

Swaziland has not yet developed an e-government strategy. Oyomno and Ramatlhape (2004: 81) noted that the Government of Swaziland had identified the need for a government ICT Master System Plan as a priority area for development once a National ICT Policy and an e-

government strategy are in place. It is evident from Section 2.13.2 of Chapter two that the country now has an ICT policy of its own. From the discussion in Section 5.1.1.1 above the country is already in the process of developing the ICT Master System Plan. Therefore the development of an e-government strategy should be next on the plan. From the results presented in Section 4.1.15 of Chapter four, 11 (50%) of the respondents noted that the absence of a coordinated e-government strategy was a major challenge to the development of e-government in Swaziland. According to Oyomno and Ramatlhape (2004: 46) an e-government strategy would assist the country to accomplish the following:

- Defining e-government in practical and operational terms that all stakeholders can relate to. Considering that the conceptualization of e-government is still a moving target, Swaziland will need to devise an operational plan to inform and guide the formulation and development initiatives.

- Identifying and formulating principles to provide a guiding framework for the development and implementation of e-government. Oyomno and Ramatlhape (2004: 47) stated that principles are high-level value statements that guide decision making to ensure their consistency with existing legislative and policy guidelines.

The development of an e-government strategy as reflected by Oyomno and Ramatlhape (2004: 52) should be a high priority undertaking in the advancement of e-government for Swaziland. The reasons advanced by Oyomno and Ramatlhape (2004: 53) for undertaking the development of an e-government strategy included the following:

- Swaziland does not have the resources needed to undertake its development programmes including e-government. The country cannot afford an experiment on a project where there is no prior knowledge of the likelihood of its success. There may be a lack of resources to repeat the experiment should it fail to produce the desired results. Therefore, it is imperative for the country to make sure that a sound strategic framework informs and guides the e-government programmes and action. The Working group on e-government in the developing world (2002: 1) commented on this issue when stating that in the developing world, where resources are scarce, e-government must target areas with high chances for success and produce winners.

- The country has multiple development demands competing for scarce national resources. Swaziland cannot afford to invest in ventures which it has no good reasons to believe will contribute to national strategies and programmes. So developing an e-government strategy will help to avoid this.

However, in Section 2.12 of Chapter two Weerakkody et al (2007) argued that most developing countries in Africa are at the emerging stage of e-government development and lag far behind developed nations, despite having had national e-government strategies in place for a considerable period of time.

5.1.1.3 E-government programme

An E-government programme has not yet been developed in the country. The research established that an e-government programme for Swaziland is also an expected outcome of the ICT Master System Plan. An e-government programme facilitates full implementation, monitoring and evaluation of e-government in a given country. Trusler (2008: 2) noted that in neighbouring South Africa the 10 year e-government implementation plan follows six stages in chronological order. These stages are as follows: information provision, two-way transactions, multi-purpose portal, personalized portals, clustering of services and comprehensive corporate transformation. In order for Swaziland to catch up with the rest of the countries in the Sub-Saharan region in terms of e-government implementation it is imperative that it takes a leaf from the experiences of some of the countries in the region such as South Africa.

In Section 2.6 of Chapter two the United Nations (2002: 50) noted four fundamental approaches to e-government development. Namely: 1. National coordinated or top-down approach, which is driven by the central government and often features a national strategic plan that coordinates all e-government initiatives, spending and implementation, among ministries, departments, agencies and units. 2. A nationally autonomous or parallel approach where ministries and agencies develop their own e-government initiatives with less formal strategic planning, support or coordination from the central government. 3. Sub-nationally where local and state government tend to be the drivers and initiators of programmes that rise up and are eventually adopted as policy by national government. 4. Sub-nationally

autonomous approach where again the innovations and programmes are developed at the local levels, but have modest influence in the national government activities.

In this regard, Swaziland should make an informed choice of an e-government development approach that is appropriate to the country's political and socio-economic situation.

5.1.1.4 ICT policy

As stated in Section 2.13.2 of Chapter two, the Swaziland Government launched an ICT policy for the country on the 29th March, 2008. Oyomno and Ramatlhape (2004: 46) in Section 2.3.1 of Chapter two noted that an ICT policy is an essential instrument to effectively manage the complexity of the emergent e-government environment. According to the Swaziland Government (2008: 36) the cornerstone of this particular policy is to achieve sustainable development in the ICT sector.

From the literature above it seems like the country is attending to the policy issues regarding e-government in Swaziland. This is evident in the recently developed ICT policy for the country. Although there is no literature suggesting a time frame for developing e-government policies, e-government strategy and an e-government programme, the pace at which the country is moving can be improved. Judging from the work of Oyomno and Ramatlhape (2004: 81), a draft ICT policy for Swaziland was due for presentation by the county's ICT task team to the Cabinet for consideration in March 2005, yet the final presentation of the policy only took place on the 29th March, 2008. This indicates that the pace at which the country is moving at in terms of e-government development is inadequate.

5.2 Appropriateness of the policies regarding e-government in Swaziland

The recently launched ICT policy for Swaziland was evaluated using the UNESCO e-readiness assessment framework to establish its appropriateness in terms of e-government development in the country. In Section 1.5.2 of Chapter one UNESCO (2005) stated that the framework helps policy makers and senior executives in the developing nations by offering them comprehensive guidelines on formulating ICT policies that can ensure a successful road to e-government maturity. The framework assists in measuring the prevalence and integration

of ICTs in homes, schools, business, health care facilities, and government offices, with additional focus on competition among access providers, speed of access, and government policy. Measurements are divided into five categories: 1. Infrastructure. 2. Access. 3. Application and services. 4. Economy. 5. Enablers (policy, privacy, security, and ubiquity).

In Section 2.3 of Chapter two Kandiri (2008: 8) noted that the lack of a coherent policy is likely to contribute to the development (or prolonged existence) of ineffective infrastructure and a waste of resources. Newman, Kassam and Shaw (2008: 3) commented on this issue when stating that the e-government toolkit for Malawi has been created with the idea that physical infrastructure improvements alone will not suffice. According Newman, Kassam and Shaw (2008: 3) the crucial role of policy, particularly the appropriate legal and regulatory environments, must be stressed when confronting the more apparent issue of low teledensity and Internet penetration.

The ICT policy for Swaziland promises to enable e-government in ways that would address the expansion of ICT applications (information services) in government, promoting a better life characterised by representative and participatory democracy, transparent, open and collaborative decision making, close relations between government, business, and citizens, enhanced service delivery, new infrastructure, info-structure, integrated and seamless government services that cut across departmental boundaries providing a convenient and timely service to the citizens, and equity in the provision of government services. This assertion is evident in the objectives of the policy that are highlighted in Section 2.13.2 of Chapter two of the present study. The United Nations (2002: 22) noted that strategic goals of any national policy should, most importantly, reflect the needs and expectations of the citizens, not necessarily the dreams of policy advisors or promises of the political leadership.

Oyomno and Ramatlhape (2004: 81) stated that the Swaziland Government underscored the increasing importance, value and potential contributions of ICTs to the social and economic development of the country. According to Oyomno and Ramatlhape (2004: 81) the government had noted that unless effectively managed, ICTs also have the potential to widen the existing gap between the rich and the poor, between urban and rural communities, and between those with education and those without. It was in this light imperative to mainstream the development and application of ICTs into national development priorities and strategies.

To achieve this, Oyomno and Ramatlhape (2004: 81) noted that a national policy framework was required to guide the development of ICT applications, infrastructure, human capital, legislation and regulation, security and disaster management and institutional capabilities and to ensure that these are fully aligned to national development needs and priorities.

> The policy objective is to enhance national socio-economic development by encouraging the beneficial activities of ICT in all sectors through the provision of a conducive environment that will progressively maximize the quality and security of the life of the people of Swaziland and make the best use of the country's human and natural resources, and promote multi-layered co-operation and knowledge sharing nationally, regionally and globally (Swaziland Government 2008: 37).

The Swaziland Government (2008: 68) noted the need to put a mechanism in place to ensure that the policy is reviewed from time to time through multi-stakeholder consultative mechanisms. Apparently, judging from the discussion above it is seems Swaziland has an appropriate ICT policy. If this policy is put into good use by all concerned stakeholders, the country may be able to properly develop and implement e-government in ways that may not exacerbate the digital divide and further marginalize those without access to ICTs.

5.3 Senior government officials' perceptions of the state of e-government in Swaziland

Regarding the perceptions about the state of e-government in Swaziland, senior government officials see e-government as a phenomenon that would increase productivity, lower costs and increase the convenience of citizens in the country. Section 2.5 of Chapter two supports this assertion; Adesida (2001: 8) noted that ICTs do not only facilitate information exchange, but they are deepening the process of information exchange, creating new modes of sharing ideas, and reducing the cost of collecting and analyzing information. Some of the senior government officials are already of the opinion that the country, via the government website, should be moving beyond providing information about government ministries/departments and services to providing interactive services via the Internet. The results presented in Section 4.1.5 of Chapter four shows that 12 (54.5%) respondents stated that e-government issues in their ministries/departments are of high priority. The senior government officials were of the view that there is willingness to pursue e-government in the country, but a lack of strategy to

follow it through. Section 4.1.15 of Chapter four indicates that 11 (50%) respondents noted that the absence of a coordinated e-government strategy was a major challenge to the development and implementation of e-government in the country.

The respondents also felt that e-government activities are too centralized, thus making it very difficult for ministries/departments to make some advances in terms of improving and upgrading their webpages. This assertion is supported by the results presented in Section 4.1.12 of Chapter four as they indicate that e-government oversight is coordinated by the Department of Computer Services. Three (13.6%) respondents were of the opinion that the Computer Services Department should be decentralised like in other SADC countries so as to remove the "bottlenecks" and unnecessary "red-tape". Trusler (2008: 3) commented on this when saying that in South Africa a key feature of the country's e-government policy is its heavy reliance on the individual departments to come up with their own strategies and projects. According to Trusler (2008: 3) at best some government departments in South Africa do not seem to be initiating e-government projects at the rate that is expected, and at worst they are not initiating e-government projects at all. In Section 2.10.1.2 of Chapter two Garcia-Gil et al (2008: 2) commented on this issue when saying despite the web's promise for ease of use and access, creativity and efficiency, agency managers and leaders are finding the websites increasingly presenting challenges of inflexibility, inconsistency, workflow bottlenecks and costs. Consequently, Garcia-Gil et al (2008: 2) noted that government agencies are losing the ability to be responsive and flexible in providing new information and services. The results presented in Section 4.1.12 of Chapter four indicate that 21 (95.5%) respondents stated that the final decision for placing specific content and information online for ministries/departments lies with the principal secretaries in Swaziland. This factor could be another bottleneck as, in the researchers experience, most principal secretaries in government are hard to get hold of.

Three (13.6%) respondents noted that for e-government to be successful in Swaziland, government has to form strategic partnerships with countries that have been successful in implementing e-government and with the service providers such as Swazi MTN (the only mobile cellular network company operating in the country) and the Swaziland Post and Telecommunication Company. All these stakeholders should try and work together to tackle the connection problem in order to find possible ways of reducing the high

communications/connection costs. Respondents perceived that once the cost of connection is alleviated the challenge of reaching the rural areas such as schools and hospitals would be a thing of the past. The country could then begin to realize the benefits of e-government.

The United Nations (2002: 52) observed that the belief that online service delivery is less costly than other channels is not wholly unfounded. According to the United Nations (2002: 52) most e-government savings expected or anticipated by the transferring and upgrading of service delivery will not be realized in the fiscal year in which the project is launched or the services are upgraded. The United Nations (2002: 52) stated that it could be several years before government can show appreciable savings. In Section 2.5 of Chapter two of the present study Greenberg (2006: 9) commented on the aspect of cost when stating that though many bureaucrats believe e-government will yield high savings, the upfront e-government costs of new technology are substantial and costs savings do not emerge until enough users start taking advantage of the electronic delivery systems.

According to the United Nations (2002: 52) planning web-based service delivery programmes should include a scheme that automatically collects unit cost data, analyzes and projects costs. The United Nations (2002: 52) argued that, logically, the unit cost of web-based services will be reduced if there is an increase in citizen use. Arguably citizen use will increase as more people become web proficient. Analysis should factor in increased speed and accuracy of online service delivery and increased customer satisfaction. The strategic partnership recommended by the respondents is one of the three delivery methodologies of back office integration highlighted in Section 2.7 of Chapter two. According to the United Nations (2008: 135) the strategic partnership model differs from outsourcing in that the function is retained in-house. However, unlike in-house delivery, a relationship is formed with an external supplier to deliver the project. This relationship is based on a contract and generally involves an external partner able to bring specialist expertise as well as investment in technology. The results presented in Section 4.1.16 of Chapter four indicated that at present the government outsources projects such as network architecture as it relates to e-government implementation to private companies.

From the literature it is evident that e-government in Swaziland has chances of proper development and implementation. The present study can make an inference based on the

discussion above that there is the requisite political will in Swaziland. According to the working group on e-government in the developing world (2002: 13) nothing is more critical to the success of e-government than political will. The working group on e-government in the developing world (2002: 13) stated that behind every successful e-government project is a visionary leader or leaders who push for change even through difficult moments. The right leader has authority, willing to take risks, willing to secure funds for the programme, will commit time on an ongoing basis, and will publicly endorse and advocate for e-government. Section 2.13.2 of Chapter two of the present study stated that during the launch of the ICT policy the Prime Minister of the country publicly endorsed the ICT policy and pledged full support of the government to the implementation of the policy.

In addition, at the swearing in ceremony of the recently appointed cabinet ministers in Swaziland as reflected in section 2.13.6.5 of Chapter two, Dlamini (2008) reporting for *Swazi observer* stated that the newly appointed Prime Minister of the country Dr Barnabas Sibusiso Dlamini's speech noted that "as per requirements of the constitution, government needed to take services to the people, closer to where they live. We shall effectively and efficiently operationalise the government's Decentralisation policy". It is worth pointing out that it is "early days" and whether this happens or not will be looked at with interest. The scope of the policy as reflected in the Swaziland Government (2005: 2) covers e-government. According to the policy the Computer Services Department which is now placed under the newly established Ministry of Information and Communication Technology shall play a key and strategic role in the implementation of the Decentralisation policy. Moreover, as observed in the earlier Chapters of the present study e-government involves taking government services to the people. Therefore, the establishment of the Ministry of Information and Communication Technology and the placement of the Department of Computer Services under its jurisdiction and the launch of the ICT policy can be seen as an indicator of political will in the country in as far as e-government development and implementation is concerned.

Also, two (9%) of the respondents as stated in Section 3.2 of Chapter three were from the offices of the Prime Minister and the Deputy Prime-Minister of the country, and where required they gave the general views from their offices regarding e-government. These views gave the present study the much needed ground to make an inference that the country has the requisite political will to see e-government through. However, the general perception noted

here is the major lack of coordination between government departments with regards to the overall development and implementation of e-government in the country.

5.4 Initiatives already launched regarding e-government in Swaziland

In Section 1.3 of Chapter one Oyomno and Ramatlhape (2004: 45) stated that information services (government organisations and structures, directory information, access to information, and policy documents and reports), electronic administration, call centre services, Tinkhundla access portals, and the development of e-government strategy are potential priority initiatives for the development and implementation of e-government in Swaziland. It is evident in Section 2.13.2 of Chapter two that an appropriate ICT policy for the country has already been developed. The results shown in Section 4.1.6 of Chapter four disclosed that the assistance programmes for the less privileged, awareness through the media to reach rural areas, and awareness programmes to meet the special needs of citizens are "special initiatives" that are being implemented by the Swaziland Government to close the digital divide. The United Nations (2005: 1) commented on initiatives of this kind when stating that the capacity building of the local population has to be taken into account to ensure that a vast number of people can benefit from the ICTs. According to the United Nations (2005: 1) there is a need to promote awareness of ICTs to rural people through broadcasting media and demonstrating the benefits of ICTs in exhibitions and other fora. Any e-government initiatives as reflected by Trusler (2008: 1) have to contend with a number of realities. These realities include: a high level of inequality, a weak ICT infrastructure (particularly in rural areas), a general lack of government ICT readiness and other more pressing demands in the public service which make ICT development a lower priority in budgetary terms.

In terms of budgets the results presented in section 4.1.14 of Chapter four indicate that the Department of Computer Services is given E47 million annually. This amount includes funding for capital projects that run over a period of three years. At ministerial/departmental level, twelve (54.5%) ministries/departments also allocate some funds towards promoting e-government activities as they consider the services from Computer Services to be inadequate. According to Oyomno and Ramatlhape (2004: 37) the government website project, population register, criminal justice system, the personal identification system and the Public

Sector Management Programme (PSMP) are ongoing programmes and projects that qualify to be considered as e-government initiatives. For instance, the PSMP had a mandate to develop a clear and appropriate ministerial mission, objectives, strategies and staffing levels. Also, the PSMP was entrusted with the responsibility to identify areas where government involvement needs to be reduced or is found to be inappropriate, and to increase participation in private sector, non-governmental organisations and individuals in the provision of services. According to the results presented in Section 4.1.4 of Chapter four all 22 (100%) ministries/departments have mission statements, an achievement that could be attributed to the PSMP. However, as earlier noted in Section 4.1.4 of Chapter four only two (9%) of the ministries/departments mission statements mention issues regarding ICTs and no mission statement mentioned anything on e-government.

The results in Section 4.1.7 of Chapter four confirm the presence of the national government website and the different ministries'/departments' webpages. The discussion in Section 5.1.1.1 of Chapter five disclosed that the Department of Computer Services is currently working on an ICT Master System Plan for the government which also qualifies as an e-government initiative in that the ICT Master System Plan will be used in streamlining the computerisation of government and will assist with budgetary requirements which are important considerations in providing a basis for e-government. Also there is an effort towards addressing the issue of ICT legal frameworks which is presently not available in Swaziland. The newly established Ministry of Information Communications Technology mentioned in Section 2.13.6 of Chapter two is another e-government initiative in that it houses all the departments dealing with information, communications and computer services.

Judging from the discussion above, Swaziland has already implemented a number of e-government initiatives. The recently created Ministry of Information and Communication Technology creates a better environment for e-government to develop. Such a state of affairs suggests that the country is moving in the correct direction and also promises appropriate implementation of e-government. However, there has to be proper monitoring and evaluation of these initiatives at all times so that the momentum that has been gained in developing e-government in the country is not lost. In section 2.10.1 of Chapter two the Working group on e-government in the developing world (2002: 3) noted that the e-government process needs

continuous input and feedback from the relevant stakeholders: the public, businesses and officials who use e-government services.

5.5 Content and maturation level of the different aspects of the Swaziland Government website

The evaluation of the Swaziland Government website (http://www.gov.sz) provides another indicator that some progress is being made in the country in terms of the development of e-government albeit at a slow pace. The results presented in Section 4.1.7 of Chapter four show that, with the exception of one, all the ministries/departments have a webpage within the government website. A comprehensive resource of government documents including speeches, annual reports, legislation, policies, application forms and other information is available for download. This is consistent with the first phase of the implementation plan, "information provision". However, this should not be seen as an automatic improvement in service delivery. Setting up a website as Trusler (2008: 2) observed often leads to complacency about e-government in that it is easy for an agency to believe that just because it has created a website then it has electronically delivered a service. The Working group on e-government in the developing world (2002: 22) argued that creating a website may be a benchmark in terms of implementing e-government, but it does not guarantee performance or customer usage. This might be true in societies that have high rates of Internet penetration, but even then it is only true for some websites. "In places where Internet access is cost prohibitive for the average citizen, or not widely available, there is even less reason to tout the creation of general websites, or assume they actually deliver services just because they exist" (Working group on e-government in the developing world 2002: 22).

The results presented in Section 4.1.10 of Chapter four indicate that most of the aspects expected to be found in a fully functional national government website as outlined in the United Nations (2002: 67) website evaluation form are still lacking in the Swaziland Government website. Only 15 (46.9%) aspects of a fully functional e-government website are available and functioning. Features that would qualify the website for advanced stages on the United Nations and ASPA (2002: 2) model of e-government are not available. Such features include: audio clips, video clips, security features, disability access, user payments, and non-native languages or foreign language translation. The United Nations (2002: 10) noted that

despite the highly visible and multi functional sites, many governments continue to "flight test" their programmes in an attempt to find the right combination of services, features, content and entry points that are efficient, cost-effective and truly citizen centric that would go into their websites. On that note the Swaziland Government might still be trying to find the right combination of services, features, and content that would be truly citizen centric.

The Swaziland Government website is basically informational and static in that content is seldom updated. To support this assertion, some of the ministries'/departments' webpages still reflect cabinet ministers that were long reshuffled. This result confirms the responses from the respondents of the study whereby 12 (54.5%) indicated that the update of their ministry's/department's webpages is dependent on the need and availability of new material. Only two (9.1%) respondents stated that their webpage was updated daily. The United Nations (2002: 51) noted that in the developing world, citizen focused online services barely exist as website content remains static and politicized. According to the United Nations (2002: 8) 88 percent of the United Nations member states had made a legitimate effort to commit to some form of e-government, that is, 169 countries had an established online presence with official government websites. However, in 2001, for over 25 percent of the countries, the content of official websites consisted of static and insufficient information often of a public relations nature and consistently with strong political overtones. The United Nations (2002: 8) stated that such sites can hardly be described as service delivery or considered citizen centric since they are not a medium to elicit useful feedback. The United Nations (2002: 8) noted that such a trend is predominant in several emerging countries in Asia, the Caribbean and throughout Sub-Saharan Africa where countries like Zimbabwe exploit the Web for very singular purposes. According to the United Nations (2002: 51) limited resources are an obvious explanation, but a collective lack of confidence and/or creativity on the part of the ICT strategists could be another reason. Apparently, the situation observed by the United Nations (2002: 8) in the United Nations member states especially in Sub-Saharan Africa regarding the condition of government websites is not different from the situation in Swaziland. The Swaziland Government website is not citizen centric. The e-government index for Swaziland as reflected in Section 2.12 of Chapter two stands at 0.3454. This index places the country in position 125 when rated against world countries in terms of e-government development and implementation. The country's e-government index of 0.3454 is above the African region index of 0.2739, but such a scenario does not put the

country in any better position because an index of this nature has been described by the United Nations (2008: 19) as deficient. This state of affairs means the country's e-government is still at the infancy stage of development in terms of the United Nations and ASPA (2002: 2) model of e-government. Such a situation would have a negative impact on the country's desire to realize the full benefit of e-government.

The United Nations (2002: 8) noted that the industrialized countries have taken a less desultory approach in developing the programmes and the types of services they are providing. According to the United Nations (2002: 8) this state of affairs is particularly evident throughout Europe and North and South America as nearly all the countries in both regions have highly dynamic and interactive official government websites, where content is accurate, specialized and regularly updated.

According to the United Nations (2002: 8) the capacity to conduct transactions online at the national government level in 2001 was available in 17 countries. The United Nations (2002: 8) noted that although online transactions are of the primary features that justify a wide-ranging e-government initiative, it is worth noting that despite the benefits of technology and the impact of globalization the national economies of over 75 percent of the countries are substantially cash based. In the majority of these societies, credit card use is still reserved for a selected and privileged minority. Consequently, the necessity for online transactions in such countries may not be as great as the need for reliable information. To support this assertion the results presented in Table six (6) of Section 4.1.10 in Chapter four indicate that the Swaziland Government website does not permit online payments and usage of credit cards. One other notable problem with the government website in Swaziland is that it is slow to load. Oyomno and Ramatlhape (2004: 14) as reflected in Section 2.13.4 of Chapter two observed that the Government of Swaziland suffers from an unsatisfactory slow access to the Internet by computers due to shortages of bandwidth. This situation is not unique to Swaziland. Mutula (2005) argued that most countries in Africa suffer from inadequate bandwidth. Such a situation necessitates an investment into broadband. Zwane (2007) reporting for the *Swazi observer* as reflected in Section 2.13.4 of Chapter two stated that the Swaziland Post and Telecommunications Corporation (SPTC) plans to introduce broadband in the Kingdom soon so as to catch up with the latest global communication trends.

From the discussion above it is evident that such a scenario in which the government website is basically not citizen centric would have a negative impact on the country's desire to realize the full benefit of e-government. There is still some effort to be made by the concerned officers to bring the website to the required standard so that it becomes citizen centric.

5.6 Summary

This chapter presented the discussion and interpretation of the results of the research. This chapter also integrated the results in Chapter four with the information in Chapters one and two. The main trends and patterns in the results as earlier stated in Section 5.0 of this chapter were discussed with reference to the research questions outlined in Section 1.2 of Chapter one. The general purpose of the study was to assess the state of e-government in Swaziland with special reference to the government ministries and departments.

The following chapter outlines the major findings, conclusions and recommendations of the study. These aspects are based on the findings of the study. The chapter also offers suggestions for further research.

Chapter six

Summary of findings, conclusions and recommendations

6.0 Introduction

The purpose of the study was to assess the state of e-government in Swaziland with special reference to government ministries and departments. In this chapter, a summary of the findings of the study are made and this is followed by the conclusions and recommendations. To begin with, a brief review of the study is given.

6.1 Review of the study

The study looked at the extent to which the Swaziland Government has responded to the e-government challenges and the progress made regarding the priority initiatives as pointed out in Oyomno and Ramatlhape (2004: 45) as reflected in Section 1.3 of Chapter one. This broad objective was guided by six research questions (See Section 5.0). Due to time and financial constraints pointed to in Section 1.6, the study only dealt with the most crucial challenges of e-government facing the country, namely, the development of an ICT policy and the potential priority areas that include information services. It is worth mentioning though that providing an accurate state of e-government in the country was not an easy task considering the absence of empirical studies conducted on e-government in Swaziland. Most major studies on e-government hardly cover countries in Africa.

This dissertation as reflected in Section 1.0 of Chapter one is organised into six chapters: Chapter one presented background to and outline of the research problem, definition of the key terms relevant to the study, theoretical framework which outlines the assessment framework and model for the study, justification of the study, the problem statement as well as the research questions asked in the study, and the delimitation of the study. Chapter two discussed each of the following topics as they relate to e-government: policy issues, national ICT policy, the importance of technology for e-government, the implications of e-government for financial and other related costs, approaches to e-government development, challenges and threats to e-government, critical success factors for e-government, measures

of success/failures of e-government and monitoring evaluation of e-government programmes. This chapter also presented a summary of the literature that gives a general overview of e-government in the world, the situation in Africa, and the view from Swaziland.

Chapter three described the research approach and data collection method including the instruments used in the study. This chapter also evaluated the research methodology, discussing matters of reliability and validity of the instruments used. Chapter four presented the results of the survey while Chapter five presented the discussion and interpretation of the results. This chapter also integrated the results in Chapter four with the information in Chapters one and two.

Chapter six, the current chapter, concludes the study presenting recommendations that are adding to the growing body of knowledge on e-government in Swaziland. It also makes suggestions for further research. This chapter demonstrates that the study has fulfilled its objective and answered the research question: What is the state of e-government in Swaziland?

6.2 Summary of the findings

This section presents a summary of the findings of the study in relation to the purpose of the study and the research questions that guided the study as highlighted above.

6.2.1 The policies regarding e-government in Swaziland

- This research has established that the country has developed an ICT policy. This policy creates a favourable climate that should enhance the development and implementation of e-government in Swaziland.

- However, the country is still lacking an e-government policy, e-government strategy and e-government programme.

6.2.2 Appropriateness of the policies regarding e-government in Swaziland

- The study disclosed that the country has an appropriate ICT policy. This policy promises to enable e-government in ways that would address the expansion of ICT applications (information services) in government, promoting a better life characterised by representative and participatory democracy, transparent, open and collaborative decision making, close relations between government, business, and citizens, enhanced service delivery, new infrastructure, info-structure, integrated and seamless government services that cut across departmental boundaries thereby providing a convenient and timely service to the citizens, and equity in the provision of government services. This assertion relates to the objectives of the policy that are highlighted in Section 2.13.2 of Chapter two of the present study.

6.2.3 Senior government officials' perceptions of the state of e-government in Swaziland

- The senior government officials were of the view that there is willingness to pursue e-government in the country, but a lack of strategy to follow it through.

- The senior officials are also of the opinion that government has to form strategic partnerships with countries that have been successful in implementing e-government and with the service providers in order for e-government to be a success in the country. These service providers include Swazi MTN and the Swaziland Post and Telecommunication Company.

- The officials see e-government as a phenomenon that would increase productivity, and lower the costs associated with service delivery in the country.

- Some of the senior government officials are already of the opinion that the country, via the government website, should be moving beyond providing information about government ministries/departments and services to providing interactive services via the Internet.

- Lastly, some senior officials felt that e-government activities are too centralized, thus making it very difficult for ministries/departments to make some advances in terms of improving and upgrading their webpages.

6.2.4 Initiatives already launched regarding e-government in Swaziland

- The development of an appropriate ICT policy for the country.

- The establishment of a government website to which different categories of government information are posted.

- The establishment of the Ministry of Information and Communication Technology.

- Assistance programmes for the less privileged in the form of "special initiatives" to meet the needs of citizens that are being implemented by the Swaziland Government to close the digital divide and reach rural areas.

- The population register, criminal justice system, the personal identification system and the Public Sector Management Programme (PSMP) are ongoing programmes and projects that qualify to be considered as e-government initiatives.

6.2.5 Content and maturation level of the different aspects of the Swaziland Government website

- The Swaziland Government website is seldom updated.

- The website is not citizen centric in that it is lacking some features that would assist citizens in their interaction with government. Such features include: online databases, audio clips, video clips, security features, disability access, user payments, and non-native languages or foreign language translation.

Finally, in terms of e-government in Swaziland in general:

- Swaziland's e-government index stands at 0.3454 (as pointed out in Section 5.5 of Chapter five) putting it in position 125 when rated against countries worldwide in terms of e-government development and implementation.

- The country's e-government is still at the infancy stage of development in terms of the United Nations and ASPA (2002: 2) model of e-government. Such a situation would have a negative impact on the country's desire to realize the full benefit of e-government.

- The Government of Swaziland suffers from an unsatisfactory slow access to the Internet by computers due to limited bandwidth.

6.3 Conclusion

The study achieved its purpose of assessing the state of e-government in Swaziland with special reference to government ministries and departments. The study, examined the extent to which the Swaziland Government has responded to the e-government challenges and the progress made regarding the priority initiatives as pointed out in Oyomno and Ramatlhape (2004: 45).

In conclusion, e-government in Swaziland has chances of proper development and implementation. The research came to this conclusion after considering a number of aspects including the country's ICT policy, the perceptions of senior government officers and the support the country seems to be getting from the Head of Government. The discussion chapter of the present research provided evidence to the effect that the country has the requisite political will to see e-government through. The promise of the ICT policy shall only be realized if it is put into good use by the relevant stakeholders.

What follows are recommendations based on the findings of the study and suggestions for further research.

6.4 Recommendations based on the findings of the study

It is hoped that the recommendations listed below will assist in improving the development and implementation of e-government in Swaziland.

6.4.1 Recommendations on the policies regarding e-government in Swaziland

Swaziland has developed an appropriate ICT policy, and this study recommends that the country should now prioritise the development of the following aspects:

- E-government policy
- E-government strategy
- E-government programme

6.4.2 Recommendations on the senior government officials' perceptions of the state of e-government in Swaziland

- Regarding the centralization of e-government activities which makes it very difficult for ministries/departments to make some advances in terms of improving and upgrading their webpages, this study recommends that the country explores the other approaches to e-government development as reflected in Section 5.1.1.3 of Chapter five. For example, the country can employ the nationally autonomous or parallel approach where ministries and agencies develop their own e-government initiatives with less formal strategic planning, support or coordination from the central government.

6.4.3 Recommendations on the initiatives that have already been launched regarding e-government in Swaziland

- To ensure continuity and sustainability of e-government in Swaziland the study recommends that all the e-government initiatives that have already been launched in the country should be monitored and evaluated on a regular basis. In Section 2.10.1 of Chapter two the Working group on e-government in the developing world (2002: 3)

noted that the e-government process needs continuous input and feedback from the relevant stakeholders: the public, businesses and officials who use e-government services.

6.4.4 Recommendations on the content and maturation level of the different aspects of the Swaziland Government website

- Content administrators in government should ensure that information on the government website is updated regularly.

- To make the government website citizen-centric and advance the website to maturity levels of the e-government model, there is a dire need for the Swaziland Government to consider installing some features on the website that would further assist citizens in their interaction with government. Such features include: online databases, audio clips, video clips, security features, disability access, user payments, and non-native languages or foreign language translation.

Lastly, with regard to the state of e-government in Swaziland in general:

- To accelerate the development and implementation of e-government in the country, thus improving the state of e-government in Swaziland, the study recommends that the government should consider forming strategic partnerships with countries that have been successful in implementing e-government. Strategic partnership can also be established with service providers such as Swazi MTN and the Swaziland Post and Telecommunication Company to tackle the issue of increasing the broadband capacity.

- Finally, to counteract the effects of the shortages of bandwidth in the country, the study recommends that the country makes an investment into broadband.

6.5 Suggestions for further research

- As stated in Section 5.3 of Chapter five, political will is an important factor in determining the success of e-government as reflected by the Working group on e-government in the developing world (2002: 13). The present study noted that Swaziland has the requisite political will. Further research can explore the extent to which e-government is being developed and implemented in the country in the wake of the requisite political will.

- Due to time and financial constraints as reflected in Section 1.6 of Chapter one this study only dealt with the most crucial challenges of e-government facing the country such as the development of an ICT policy and the potential priority areas such as information services. There is a dire need for further research to assess the extent to which the Government of Swaziland is responding to the other challenges not covered by the present study. These challenges, as noted by Oyomno and Ramatlhape (2004: 45), include: the development of an inclusive ICT infrastructure, legal framework, architecture and standards, information and knowledge management, research and development, security and risk management.

- There is also a need to consider examining how the remaining priority initiatives are being implemented in the country. These initiatives include the establishment of call centre services and the Tinkhundla access portals.

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Appendix 1   **ID [   ]**

Questionnaire directed to ministries and departments on the extent to which the Swaziland Government has responded to the challenges and the progress made pertaining to e-government in the country.

I am a Masters student at the University of KwaZulu-Natal (Pietermaritzburg) conducting research on the extent to which the Swaziland Government has responded to the challenges and progress made regarding the priority initiatives pertaining to electronic government in the country. You are invited to participate in the research because of the valuable contribution you can make in terms of understanding the state of e-government in your ministry/department. The information given will be treated as confidential and you are not obliged to disclose your name or staff number. You have a right to withdraw at any point of the study, for any reason, and without any prejudice, and the information collected will be turned over to you. There are no known risks from being in the study. Taking part in the study is completely voluntary.

Instructions

1. Please answer all questions;
2. Please tick inside the bracket, the answer chosen by you;
3. Where applicable, please write your response clearly in the space provided.

Background information (Optional)

1. Name of ministry/department_____
2. Address_____
3. Telephone number_____
4. Fax number_____
5. Email address _____
6. Website_____

Questions

E-government policies

1. What type of services does your department offer to the public?

   _____

   _____

2. Does your ministry/department have a mission statement?   Y[ ] N [ ]
3. Does your ministry/department have a webpage?   Y[ ] N [ ]

   If yes to question 3 please answer question 4 and 5, if no go to question 6

4. What type of information does your department make available on the website?

    _____

5. What type of information do you intend making available to the public through the website in the near future?

    _____

    _____

6. Which of these statements describe the ministry/department in terms of promoting e-government and web/Internet development? (Tick all those that apply)

    a) No one is responsible for promoting e-government in the ministry/department
                                                                    [ ]
    b) Several or many different units play a role in promoting e-government and it is not clear which if any has overall charge   [ ]
    c) E-government is mainly an IT issue and so the computer services department has primary responsibility for promoting Web or Internet developments   [ ]
    d) Web/Internet development are coordinated by computer services department with the involvement from others and a clear overall management line   [ ]

Perceptions on e-government

7. In your opinion, how high of a priority is your ministry's/department's commitment to e-government?
    a) Very high   [ ]
    b) High   [ ]
    c) Neutral   [ ]
    d) Low   [ ]
    e) Very low   [ ]

8. Approximately how much in Emalangeni is being allocated annually to e-government activities in your ministry/department?
    a) Below E50, 000   [ ]
    b) E50, 001 – E100, 000   [ ]
    c) E100, 001 – E150, 000   [ ]
    d) E150, 001 and above   [ ]

9. Which of the following factors are hindering e-government development in your ministry/department? (Tick all those that apply)
    a) Limited availability of financial resources   [ ]
    b) Lack of technology/ trained public sector IT staff   [ ]
    c) Internet access limitations   [ ]
    d) Absence of a coordinated government strategy   [ ]
    e) Lack of support from parliament   [ ]
    f) Other (please specify)_____[ ]

10. If you have ticked more than one, which one do you consider the greatest challenge?

    _____

11. Have any of the following actions been taken by your ministry/department to encourage increased citizen use of the Internet for accessing government services? (Tick all those that apply)
    a) Financial assistance to local govt for e-govt activities   [ ]
    b) Government sponsored training programmes for the public   [ ]
    c) National public information campaigns;   [ ]
    d) Local citizen awareness programmes;   [ ]
    e) Public information kiosks;   [ ]
    f) Not sure   [ ]
    g) Other (please specify)_____

12. Which of the following areas of e-government programme are being outsourced in your ministry/department? (Tick all those that apply)
    a) Network architecture   [ ]
    b) Online service delivery   [ ]
    c) Human resource training   [ ]
    d) Transactions and collections   [ ]
    e) Website development   [ ]
    f) Not sure   [ ]
    g) Other (please specify)_____

13. Who makes the decision to place specific content and information online? (Tick all those that apply)
    a) Individual minister   [ ]
    b) Individual dept/unit heads   [ ]
    c) Chief information officer   [ ]
    d) Principal secretary   [ ]
    e) Unsure   [ ]

14. How often is the information on your ministry/departments' webpage updated?
    _____

15. Does your department have an intranet?   Y[ ] N[ ] Unsure[ ]

16. How would you describe the condition of your intranet and webpage? (Tick all that apply)
    a) We have no intranet as such, only a common desktop and some template files for common forms etc   [ ]
    b) The ministry/department has a basic webpage with some static materials, infrequently changed   [ ]
    c) The ministry/department publishes extensive information on the webpage, makes information available to citizens and provides forms for downloading and regular updating   [ ]
    d) The ministry/department regularly publishes information in interactive ways, allowing users to tailor or personalise their use of the webpage, and allows forms to be submitted on-line   [ ]
    e) The webpage allows users to gather information in interactive ways and undertake most of its substantial, useful transactions on-line   [ ]

114

17. Do you have any information/comment you would like to add regarding e-government in Swaziland?_____

_____

_____

_____

_____

_____

_____

_____

_____

THANK YOU VERY MUCH FOR YOUR TIME.

Interview schedule for the director of computer services on the extent to which the Swaziland Government has responded to the challenges and the progress made pertaining to e-government in the country.

I am a Masters student at the University of KwaZulu-Natal (Pietermaritzburg) conducting research on the extent to which the Swaziland Government has responded to the challenges and progress made regarding the priority initiatives pertaining to electronic government in the country. You are invited to participate in the research because of the valuable contribution you can make in terms of understanding the state of e-government in the country. The information given will be treated as confidential and you are not obliged to disclose your name or staff number. You have a right to withdraw at any point of the study, for any reason, and without any prejudice, and the information collected will be turned over to you. There are no known risks from being in the study. Taking part in the study is completely voluntary.

Background information

1. Address_____
2. Telephone number_____
3. Fax number_____
4. Email address _____
5. Website_____

Questions

E-government policies

1. Has the government developed an e-government policy?   Y[ ] N[ ]
2. Has the government developed an e-government strategic plan?   Y[ ] N[ ]
3. Does the government have an e-government programme?   Y[ ] N[ ]
   If yes in question 3
4. Approximately what is the time frame for fully implementing the e-government programme?_____

Perceptions on e-government

5. In your opinion, how high of a priority is the country's commitment to e-government?
   a) Very high   [ ]
   b) High   [ ]
   c) Neutral   [ ]
   d) Low   [ ]
   e) Very low   [ ]

6. Approximately how much in Emalangeni (Swazi currency) is being allocated annually to e-government activities?_____

7. Are any of the following challenges hindering the country's e-government development?
   a) Limited availability of financial resources   Y[ ] N[ ]
   b) Lack of technology/ trained public sector IT staff   Y[ ] N[ ]
   c) Internet access limitations   Y[ ] N[ ]
   d) Absence of a coordinated government strategy   Y[ ] N[ ]
   e) Lack of support from parliament   Y[ ] N[ ]
   f) Other _____

8. Are the following initiatives being undertaken by decision-makers to ensure e-government oversight? The establishment of:
   a) Special institution   Y[ ] N[ ]
   b) Special commissions   Y[ ] N[ ]
   c) Specialized units within departments   Y[ ] N[ ]
   d) E-government task force(s)   Y[ ] N[ ]
   e) Non-governmental independent oversight   Y[ ] N[ ]
   f) Other _____

9. Have any of the following actions been taken by the national government to encourage increased citizen use of the Internet for accessing government services?
   a) Financial assistance to local govt for e-govt activities Y[ ] N[ ]
   b) Government sponsored training programmes for the public Y[ ] N[ ]
   c) National public information campaigns   Y[ ] N[ ]
   d) Local citizen awareness programmes   Y[ ] N[ ]
   e) Public information kiosks   Y[ ] N[ ]
   f) Other _____

10. Are any of the following government "special initiatives" being instituted to close the "digital divide"?
    a) Assistance programmes for the less privileged   Y[ ] N[ ]
    b) Awareness through the media to reach rural areas   Y[ ] N[ ]
    c) Awareness programmes to reach the special needs of citizens Y[ ] N[ ]
    d) Awareness through educational institutions   Y[ ] N[ ]
    e) Financial assistance to local governments   Y[ ] N[ ]
    f) Other _____

11. Are any of the following areas of the e-government programmes being outsourced?
    a) Network architecture   Y[ ] N[ ]
    b) Online service delivery   Y[ ] N[ ]
    c) Human resource training   Y[ ] N[ ]
    d) Transactions and collections   Y[ ] N[ ]
    e) Website development   Y[ ] N[ ]
    f) Not sure   Y[ ] N[ ]

12. Who makes the decision to place specific content and information online:
    a) Individual minister   [ ]
    b) Individual department/unit heads   [ ]
    c) Chief information officer   [ ]
    d) Principal secretary   [ ]

e) Other _____

13. How often is the information on the government website updated?_____
14. Does the government have an intranet?   Y[ ]   N[ ]
15. Do any of the government ministries/departments have an intranet?Y[ ]   N[ ]
If yes to 15
16. How would you describe the condition of these intranets?_____
_____
_____

17. Do you have any other information/comment you would like to add regarding e-government in Swaziland?_____
_____
_____
_____
_____
_____
_____
_____
_____

THANK YOU VERY MUCH FOR YOUR TIME.

Appendix 3 Standard website evaluation form

COUNTRY

SITE

URL

GENERAL QUESTIONS

Does the country maintain an official:

Customized portal (UK model)

One-stop-shop portal; (US, Australia, NZ model)

National government home page

Other (describe)

Do the sites link to any or all of the following?

Ministries -- How many?

Ministry of Health

Ministry of Education

Ministry of Welfare/Social Services

Ministry of Labor

Specialized agencies/ divisions units

Parliaments / national legislatures

Regional / Local governments

International Orgs (UN) NGOs

Private Sector sites

Is there an national e-gov strategic plan online?

Can the user download or printout national laws; bills; judicial decisions?

SITE QUESTIONS

How is the sites content organized?   By:

services provided

alphabetically

themes

none of the above

Does the site's content include?

links to minister / dept. head

links internal divisions, units, staff

links to specialized programmes

links to the online services offered
links to other related services provided by government

links to other govt ministries, agencies, departments

general organization information / org chart

Does the site's content include the following?

name of contact individual(s)

telephone numbers, addresses, etc

directories

site index or map

help feature

contact us

FAQs

what's new link

Does the site offer access to specialized databases? (i.e. job banks, hospitals, legislation,)

Is the site multi-lingual? Please list all languages other than national.

Does the site offer a search feature that is easy to use and accurate?

Does the site allow the user to post comments or offer feedback?

Is there a site security feature?

SERVICES QUESTIONS

Does the site offer the following online services:

e-application forms requesting a specific service

e-forms requesting a permit of any kind

e-form requesting a benefits payment

request information or publication

register online for a benefits service or progamme
register online for a training or skills enhancement course

register online for a job or employment service

apply / pay a utility bill, fine or other govt obligation

make an appointment with officials, staff etc:

download or print forms or applications

Other(s):

Can taxes be *filed* (national;local;sales; VAT) online?

Can the user *pay* any tax obligation online?

Can the user pay fines or other government obligations online?

What form or method of online payment is used (for *any* transaction)

credit card

bank or debit card

bill the users home

Please list any additional online *transactional* services; this could include: purchasing postal services, govt bids, commerative gifts, property, military surplus, etc.

Is there a direct link to specific individual services?	
Is there a direct link to all available online forms?	
What kind of published information is available?	
official government reports	
publications available for purchase	
newsletters	
press releases; news alerts, bios, pa* summaries	
specialized publications on critical topics	
Can the documents be saved or downloaded?	
Is there a fee?	
Are the documents mostly in PDF format?	

ADVANCED FEATURES

Can the user participate in a chat room or e-townhall?
Does the site accept digital signatures?
Does the site include:
links to private sector sites
advertisements of any kind
other uncommon features (give an example)
Does the site offer streaming media, like live video or audio of events, etc.
Does the site offer push technology?

COMMENTARY

Would you describe the type of content and services available as predominately: (select one)
informational (basic);
interactive (users can e-mail, offer feedback, etc)
transactional (user can pay for service(s); taxes; fines; purchases)
Would you say the content was updated:
frequently (weekly)
regularly (monthly or bi-monthly)
seldom (six months or longer)
How user-friendly was the site? Select one
Extremely user friendly with content well presented
User friendly with content adequately displayed
Somewhat user friendly with room for improvement
Not at all user friendly; content was disorganized
Site was poorly developed.
Were there any content items, basic features, links you expected to be present on the site and were not?
If so, please list examples.

MISC

Name of contact on page (if any)	
Title	
e-mail	
Telephone	

(*) For questions 14-17 the Minstry of Finance or any Division or Unit of Taxation may be the best place to try, in which case please indicate so on the form.

(*) pa = public affairs / public relations pieces

Source: United Nations (2002: 67)