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Nengovhela, Nthumeni R.

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THE PERFORMANCE OF GOVERNMENT INFORMATION TECHNOLOGY OFFICERS IN E-GOVERNMENT POLICY IMPLEMENTATION

NTHUMENI R.NENGOVHELA

STUDENT NUMBER: 338035

A Research report submitted to the, Faculty of Commerce, Law and Management, University of the Witwatersrand in partial fulfilment of the requirements for the degree of Masters of Management in ICT Policy and Regulations (MMICTR).

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ABSTRACT

The purpose of this research is to investigate the performance of the Government Information Technology Officers (GITOs) in the implementation of e-government policy during the last decade. The CIOs in the South African public sector are referred to as GITOs, the position in government departments that was established by a Cabinet memorandum in the year 2000. By 2001, the South African government developed an e-government policy framework which presents the basis for implementation of e-government initiatives by several stakeholders including the GITOs. A qualitative study was undertaken based on the case study of four national departments to determine the performance of the GITOs in the implementation of this policy. The literature review has pointed out several hindrances to the implementation of e-government initiatives and critical success factors that are to be in place to ensure successful implementation. The findings identifies the barriers for the GITOs to implement the e-government policy to include, weak policy, lack of strategic leadership, critical ICT skills, infrastructure, un-coordinated funding and low levels of e-readiness by departments. The analysis categorised the factors into six themes, i.e. ICT governance framework, leadership, organisational structural arrangement, digital divide (infrastructure and access) and integration of services and systems. The analysis of the findings and lessons from the literature review constituted the basis for policy recommendations in the last chapter.

DECLARATION

I declare that '**the performance of Government Information Technology Officers in e-government implementation',** a qualitative case study of selected four government departments, are my own, unaided work. It is submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand in partial fulfilment of the requirements for the degree of Masters of Management in ICT Policy and Regulations (MMICTR). It has not been submitted before for any degree or examination at any other university. Where the efforts of others have been used, all the sources that have been used or quoted have been acknowledged by means of complete references.

……. **……..**

SIGNATURE **DATE**

NTHUMENI R. NENGOVHELA

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Praises be to the Lord God Almighty who gave me a chance to life, ability to achieve what seemed impossible at times. I would like to specifically thank Luci Abrahams, my supervisor who dedicated many hours in teaching, advising, correcting and supporting me through this journey. Knowledge sharing is what she knows best and truly believed in the practice thereof. With greatest humility I thank all the participants in my inquiry, all GITOs who participated, the chair of the GITO Council, the Acting Government CIO and Prof Cloete for his insights on public policy matters.

I must convey my sincere gratitude to my family that supported me through this long and rocky journey to succeed in my knowledge building. My friends and colleagues have played an important role of unselfishly giving a helping hand when I was weary both mentally and spiritually.

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CHAPTER 1 : THE JOURNEY TO E-GOVERNMENT IN SOUTH AFRICA

1.1 Introduction

The past 15 years are marked with several activities and initiatives to introduce an electronic government (e-government) in South Africa. The South African society is the second highest unequal society in the world, the composition of few upper and middle class citizens and majority of poor, unemployed and less educated (Bhorat, Van der Westhuizen and Jacobs, 2009). The government priorities since 2009 include amongst others education, improve health profiles, crime prevention, rural development strategy and improve service delivery (RSA, 2009). The economic inequality is replicated by the digital divide between urban and rural areas. The rural areas of South Africa are marked with scarcity of broadband communications infrastructure, access to internet and electronic devices while the urban areas are declared the "digital cities" of the country.

South African government is engaged in online information publishing in a few government departments and agencies. Few departments have progressed to the interaction and transaction phase, one such agency is the South Africa Revenue Services which provides the electronic tax filing system and enables tax payers to complete the process electronically. The main challenge in online interacting and transacting is that the sharp front end applications are supported by the integrated back end capabilities. This requires a total review of the offline business processes in order to integrate all services that are required to complete a single transaction.

There are various definitions of e-government and there is also a tendency of using the terminology interchangeably with e-governance. Drucker states that "e-governance can be said to be about the use of emerging information and communications technologies to facilitate the processes of government and public administration. In reality, though, e-governance is really about choice. It is about providing citizens with the ability to choose the manner in which they wish to interact with their government" (2001: p12). It is the process based on the use of ICT that government adopts to interact with its citizens.

A scholar in the field Okot-Uma (2000) cited in the Centre for the Public Service Innovation (CPSI) study defines e-government along the same line as follows "e-governance seeks to realise the processes and structures for harnessing the potentialities of ICT at various levels of

Government and the public sector and beyond for the purpose of enhancing good governance (2003: 10). Therefore it is clear that e-governance is: (a) about putting policies, strategies and processes in place with an intention to achieve e-government (b) about promoting good governance and the introduction of ICT applications.

e-Government according to Cook (2002) is the "actual changing of the way people and business interact with government online". He argues that in order for governments to do it correctly, government must find out "what people and businesses want, expect, don't want, and worry about" (2002: 12). It simply means that technologies to be deployed must support citizen's choices and needs.

Definition of e-government adopted in this research report is simply online services by government to citizens and business. The critical aspect of e-government is to bring citizens and business closer to its government (Fang, 2002). e-Government also have the capability to influence and create an informed society; liberate citizens and enable them to participate in the governance processes through online services and interactions. In that sense citizens are the focal point of e-government and its initiatives are therefore characterized based on their intended users:

- Government to Government (G2G) – systems that support information sharing and collaboration within or between government departments.
- Government to Citizen (G2C) – systems that enables government to provide information, services and interaction with citizens.
- Government to Business (G2B) – systems that facilitate range of relationships and interactions between government and businesses (Yildiz, 2007).

These conceptual frameworks are to be applicable at all levels of government, i.e. the national, provincial, local and municipal levels. There are several role-players in the electronic provision of services to citizens and business, however this report will focus and analyse the role and performance of the Government Information Technology Officers particularly in e-government policy implementation.

Following the lessons learnt in e-commerce whereby Chief Information Officers (CIO) became a strategic coordinator of business and enables operations through ICT, it was apparent for government that the similar function was critical to drive e-government

implementation. The responsibility was entrusted to the CIO in government referred to as a Government Information Technology Officer (GITO) to develop corporate or departmental ICT governance; planning and overseeing the implementation of ICT integration. GITOs are regarded as links between business needs and IT enablement; therefore they require both business and technology skills. Their role is seen as a "vital strategy to bridge the gap between management and technology" (Obi, 2007: 169).

The GITOs' performance is critical in the implementation of e-government initiatives. This role-player is the knowledge hub of all the services that a department renders to all its clients, and the requirements integrator for technology acquisition and maintenance. GITOs play their roles within business entity and technology arena and have been identified as a critical entity that must have both business, financial and technology skills. The GITO manages the infrastructure plan, applications plan and operations of ICT within a department and their performance is fundamental to the successful implementation of e-government policy.

This research report will explore the role and performance of Government Information Technology Officers (GITO's) and other enabling entities in successfully implementing of e-government policy, in the context of the journey South Africa has undertaken to implement e-government. The time line to be reviewed by this study is 10 years since the establishment of the GITO function in government departments.

The themes arising from the body of knowledge on information society, the changing role and performance of CIOs and critical success factors to their performance will be analysed in chapter 2. The literature review contextualizes and elaborates and positions the study within the broader body of already available knowledge. Chapter three clarifies purpose of the study including the main question and sub-questions in the study, the research approach and methodology adopted to answer the research questions. The summary of data collected is reported in an evidence approach in chapter four while the thematic analysis of data is presented in 5. The final chapter presents recommendation for the GITOs, GITO Council and GCIO and conclusion is presented in a form of a policy framework method.

1.2 e-Government in South Africa: chronological historical background

In the dawn of digital and information era, South Africa finds itself with the growing divide with regards to adoption and utilisation of Information Communications Technology (ICT)

between private and public sector. The main challenge was how to evaluate and justify the success and effectiveness of government ICT investments. In an attempt to improve service delivery, South Africa's public sector joins the global trend and adopts ICT as a strategic enabler of business operations. The main aim of adopting the e-government approach was in pursuit of service excellence and the concept evolves from the principles of BathoPele (Kaisara & Pather, 2011). BathoPele is a Sesotho saying for People first and was used as a slogan to positively change the perceptions and behaviour of public servants in order to transform the service delivery in the public sector.

1.3 A historical account of the transformation of ICT functions in government: 1996 -2000

Transformation of ICT in the public sector began with the Presidential Review Commission (PRC) of 1996. The PRC was tasked to review the structures and functions of government with a view to make recommendations on the transformation of the Public Service. According to Abrahams (2009: p1016) "The PRC's view of good governance includes protection and enhancement of representative and participatory democracy; promotion of economic and social development and empowerment of disadvantaged communities; government responsibility for efficient and effective delivery of services; and government openness to public view and appraisal". After the thorough analysis of the Information management and ICT management in different departments, the PRC report came to a conclusion that there was "lack of strategic direction in the utilisation of Information Management, Information Systems and Information Technology (IMST), to support government goals" (RSA: 2000). The chapter 6 of the report focused on Information Technology in Government and identified the following challenges and shortcomings.

- Lack of clear roles and responsibilities for IT in the public sector,
- Lack of co-ordination of IT initiatives,
- Incompatibility of systems and architecture,
- Waste of resources,
- Lack of knowledge and skills and
- IT is not business process driven.(PRC: 2008)

It is important to note that the PRC has specifically identified information as a fundamental resource of government and that it should be viewed in the same serious sense along with

other resources like people, money and assets. The PRC report argued that the state may also have a major role to play in promoting the information society through the consequent use of ICT in the South African society. It was however recognised that the public service was lagging behind in ICT adoption to the private sector. It was also noticed that the private sector in SA was also slipping behind ICT developments than elsewhere in the world. (PRC: 2008).

The commission amongst others things, recommended the establishment of a function of the Chief Information Officer in the public sector. The Chief Information Officer was intended to develop IMST policy through a Policy committee for three spheres of Government and coordinate a technology forum for all IT managers in government where identified projects will be managed.

The commission also recommended the establishment of a lead agency to deal with the procurement of Information Technology (IT) goods and services, the use of economies of scale to reduce cost of IT, enhance government productivity by using IT and focus government IT procurement towards the betterment of citizen-centric services. The PRC was bold to pronounce on the need for government to implement electronic government. The view then was to build capabilities that enable the public not only to access information but to conduct transactions with government departments. “The Commission therefore recommends that government give serious consideration to migrating to completely electronic communication within the next five years” (PRC, 1998). The latter recommendation was the foundation of e-government programme whereby ICT was regarded as an enabler for service delivery. Several initiatives were later put in place to attempt to better the services to citizens. In this regard, it is concluded that the implementation of the PRC recommendations lays a foundation for later adoption of e-government policy.

1.4 The 1997 White Paper on Transformation of the Public Service Delivery

In parallel and response to the PRC Report, a White Paper on Transforming Public Service Delivery (Batho Pele White Paper) was published as a cornerstone for transforming public service delivery. It was institutionalised in all government departments as a service delivery mechanism. This policy framework was seen necessary at the time as a change mechanism to

“introduce a fresh approach to service delivery: an approach which puts pressure on systems, procedures, attitudes and behaviour within the Public Service and reorients them in the customer's favour, an approach which puts the people first” (RSA, 1997: 12). The intention was to change the mind-set of the public servants to emulate better services that are offered to costumers in the private sector.

This policy position gives an anchor to e-Government policy framework adopted by South Africa as a tenet of putting people first in service delivery. It is stated in the Policy framework (Electronic Government, The Digital Future) that “the starting point in the e-Government drive should always be to identify what the customer wants and that the achievement of the delivery of measurable IT value is through improved service delivery” (DPSA, 2001: 7).

The Batho-Pele white paper identified the eight principles for transforming public service delivery to underpin service delivery. The eight principles are consultation; setting service standards; increasing access; ensuring courtesy; providing information; openness and transparency; redress and value for money. Although all the principles are interconnected, e-Government finds its home under the obligation of ensuring that citizens get information in the right format and medium as and when required. It was also anticipated that citizens will save costs if given access to required information timely (RSA, 1997). Kiasara and Pather (2009 and 2011) also identifies the guiding principles of Bathopele as the cornerstone of transformation of service delivery and a foundation of various initiatives adopted to achieve this main objective. They identify e-government programme as one of the strategic initiative in improving the turnaround time in providing services to the citizens.

In a nutshell the white paper becomes the first legal prescript which initiates the e-government as a key service delivery improvement programme. Government’s intention to adopt ICT as an enabler in service delivery was clearly beginning to take a form and shape already in 1997 taking into consideration that the world was taken up by the Internet storm in the same period.

1.5 The establishment of the lead agency

As per recommendation of the PRC, a lead agency was established under the executive authority of the Minister of Public Service and Administration through a legislation State Information Technology Agency Act of 1998. The State Information Technology Agency (SITA) was established on 4 April 1999. (SITA: 2011) The aim was to consolidate and coordinate the State's information technology resources in order to achieve cost savings through scale, increase delivery capabilities and enhance interoperability. The three entities that merged and incorporated to formulate SITA were Central Computer services (CCS), Infoplan and South African Police Service Information Technology (SAPS IT) department. CCS was an IT Chief Directorate of the Department of State Expenditure while Infoplan provided Information Technology, Information Systems and Information Management services to the Department of Defence (DOD).

As indicated by the PRC report, most government departments had internal IT units which performed the IT tasks variably. Weaknesses as identified above have led to government adopting the recommendation of a lead agency. The bigger departments like SAPS and DOD tended to look organised in terms of ICT provision function than the smaller departments. However, their systems were not interoperable, not business focus and within their departments lay duplication which poses some different challenges. Skills development and retention was one of the main challenges hence, a great deal of the ICT function was contracted out to the private sector. Departments could not recruit and retain suitably qualified, experienced staff and were forced to either contract the work out to the private sector or recruit consultants. The PRC concluded that consultants became full time employees of government at considerable high cost. This over-dependence of Government on contractors and consultants became one of the key issues for the resolution of SITA. The aim of Government in creating this institution was to ensure government departments focus on their core mandates and not focus on issues around systems and software developments. Since it has been identified that the government departments have "difficulties in recruiting, developing and retaining skilled IT personnel; managing IT procurement and ensuring that the government gets value for money; using IT to support transformation and service delivery; utilising effectively expensive IT resources; and integrating IT initiatives" (SITA, 2011).

In a nutshell, SITA was established to consolidate and co-ordinate the government's IMST interests.

The SITA Act established and prescribed a methodology to government departments on how to utilise and participate in the services rendered by SITA. SITA provides mandatory and non-mandatory services regarding information technology goods and services. SITA operates as one of the three levers in the policy implementation. The Office of the Government Chief Information Officer (OGCIO)'s mandate is to provide strategic leadership on e-government to all levels of government while SITA facilitates the acquiring and the deployment of solutions. SITA also provides the ICT network infrastructure and support the service delivery.

1.6 The establishment of the Government Information Technology Officers and the Council

The other lever is the Government Information Technology Officers Council (GITOC) which comprises of the heads of IT for each national and provincial department. The transfer of Information Technology (IT) function of departments to SITA in 1999, left a gap/vacuum in aligning the management of SITA service delivery to departmental needs, appropriate support to departmental goals and alignment to strategic direction of government. The Cabinet Memorandum 08a of 2000 established the functions of the Government Information Technology Officer (GITO) in all national and provincial departments also known as the head of IT or CIO in a government department. The aim of establishing the functions of the GITO, the GITO Council and Office of the Government Chief Information Officer was to co-ordinate all government Information Management Systems and Technology requirements and initiatives at a strategic level and guide the SITA into focused implementation.

> "The PRC Report identified a lack of strategic direction in the utilisation of Information Management, Information Systems and Information Technology (IMST), to support government goals and proposed the creation of a GITO that will co-ordinate all government IMST initiatives on a high level" (RSA, 2000).

The role of the GITO is stipulated at the cabinet memorandum as a key management position responsible for Information and IT policy and aligning Information and IT strategies with business strategies, the strategic direction of the department and the government as a whole. Amongst all the detailed Information Management and IT functions on the cabinet memorandum, the GITO is to ensure the promotion of e-Government programme and initiatives. It is on this basis that the role and performance of the GITO is central in the implementation of e-government policy. The responsibilities of the GITO requires a person

with cross-functional capabilities and a wide variety of skills (Business and IT) in order to align the IT with the strategic direction of the department and to re-engineer business processes in order to achieve such.

The establishment of the OGCIO was a recommendation of the PRC, the initial plan was that it should establish an ICT policy committee and the technology forum in order to give strategic direction on all IMST functions including directing e-government. The establishment of the GCIO precedes establishment of SITA and the function of the GITO in government departments. The OGCIO was established so that 'Information technology must not be applied haphazardly or sporadically. It also must not be used simply to automate existing practices. Instead, information technology must be seen as the essential infrastructure for the government in the 21st century - a modernized electronic government which allow citizens broader and more timely access to information and services through efficient, customer- responsive processes, thereby creating a fundamental revision in the relationship between the Government and everyone served by it' (PRC: 1998). The tripartite structural arrangement has been analysed by Abrahams (2009) and found to have weaknesses in both sides. She further argued that it is the decentralisation of this function that could have hindered the successful implementation of e-government programme. "The consequences are enormous as this affect millions of people and business in South Africa" (Abrahams: 2009, p1017).

1.7 e-Government policy development and parallel initiatives: post 2000

The e-government policy framework was developed in 2001 at DPSA (Electronic Government, The Digital Future) which "remains a quest for higher quality public service" (Kiasara: 2011, p3). This vision document recommends that e-government initiatives must address the following domains:

- E-governance: as the application of IT to all spheres of government as a way to communicate. It is referred as intra-governmental operations or Government to Government (G2G) services online.

- E-service: the use of IT to transform the delivery of public services to citizens. It meant services were to be provided online, anytime, anywhere, by any means, and in

interactive mode. These services are equally called (Government to Citizens services or G2C).

- E-business: IT to operations performed by government in the manner of business-to-business transactions and other contractual relations (e.g. procurement services online). The services were then referred to as G2B services (DPSA, 2001).

This policy framework does not clearly presents the vision and objectives of e-government initiatives, but rather sets out an IT oriented frame introducing concepts of e-governance, e-services and e-business. The definitions of e-governance, e-services and e-business are mistaken in the framework to be sub-components of e-government. e-Government is the umbrella term used for online services or electronic accessed services by government to Government (G2G); government to citizens (G2C) and government to business (G2B). e-Governance as described above is a broader term that describe the intention and processes which directs governments to use ICT to enable citizens participation or interaction in the governing processes.

The policy framework also lacks the contextualisation and proper focus on the needs of the citizens. It also failed to institutionalise the Bathopele Whitepaper regarding strong policy vision on service delivery. It does not contextualise the fact that South Africa is a developmental state; challenged by both economic and digital divide. It does not contextualise the fact that SA has put in place economic and social developmental frameworks and policies and as such the e-government framework is one of them with intended outcomes. Public participation in government processes through ICT to strengthen the democracy and good governance is not the focus of this framework too. The framework is inwardly focused on the principles of ICT transformation in government departments; e.g. Interoperability of systems, eradication of duplication and economies of scales instead of putting policy positions and roadmap of e-Government programme. The policy framework should be giving guidelines on adoption of e-services in a prioritised manner, e.g. e-education, e-health in accordance with identified priorities.

The early adoption of the policy framework in 2001 meant that South Africa could have been amongst the few countries which embarked on this journey earlier in the decade. However the policy framework mainly defines the challenges that are faced by government in enabling

e-government projects and does not prescribe any system or process to achieve the intended objectives.

Abrahams (2009: p1017) clearly dissected this policy framework and the misunderstanding of concepts like e-governance, e-business, and e-services and came to the conclusion that: "These points may appear to be minor errors, however, they reflect on the limited understanding of the ways in which electronic media transform governments and concomitantly the relationships with citizens and the broader society".
With the analysis of the same framework, Farelo and Moris (2006) view the picture differently. They agree that there are some shortfalls in certain areas, but believes that South Africa has the required legal framework and governance model, infrastructure, and human capital needed for e-government. However in all the aspects mentioned by Farelo and Moris, several policies and plans remains in draft and therefore it represents a weak Policy framework that projects the intention than concrete decisions to be implemented. The discussion this far has been on the policy and processes to enable e-government systems to offer online services, however SA had many challenges to enable this endeavour which includes the access to such services.

1.8 Tackling the access challenge

The Centre for Public sector innovation (CPSI) was created in 2001 and one of its key focuses is the access to e-government services by citizens. The CPSI introduced the concept of public access sites as an intervention since inequality and digital divide was a barrier for majority of SA citizens to access online government services. The e-government access background study by CPSI, recommended the implementation of eGateway Service Centres, a local perspective on the 'one stop shop' to range of access channels. (CPSI: 2003). Other recommended models were the Thusong Centres, Government Online and Post office kiosks as leading initiatives in implementing e-government. While CPSI study report focused on the access issues and models, similar to the DPSA policy framework "the study failed to address the developmental aspects of e-governance associated with education, health or social development" (Abrahams, 2009, pp 11).

The CPSI study gave birth to the e-gateway strategy document. The e-Gateway strategy development was a collaborative effort between CPSI and the SITA under the policy

leadership of the DPSA. Its primary focus was to find a way to improve access and quality of government services available to the citizens through the redesign of public service interfaces for interaction with citizen. The other factor was to develop innovative ideas in the use of ICT currently available to the citizens or that which will be appealing to citizens. The focus of the e-Government Gateway project was not concerned with the introduction of technology, but the focus was to improve access to "government information and services for the majority of citizens irrespective of language, geographic location, socio-economic status or historical disadvantage" (CPSI, 2003: 9).

The CPSI study was meant to establish e-government access from multiple points of entry. The strategy introduced a concept of "no wrong door" to ensure that citizens gain access to services in various ways. It meant that any public access should be giving single and integrated services of government from several departments under one stop shop. It also meant that citizens could get access to these services through various mechanisms and institutions that are convenient and appropriate to them. Lastly any access point to the citizens should offer the same quality of service delivery (CPSI: 2003, p10).

The Strategy identifies barriers of access to the implementation of e-government services as lack of appropriate infrastructure, digital divide between the majority poor black South Africans and the white counterparts; shadowed by lack of e-literacy to the same grouping, lack of education and marketing, trust to technology and high cost structures where infrastructure is available. The Strategy document finally proposed six models that could be adopted to enable citizen access i.e., smart service points connected through the country's available commercial networks to get basic information and selected transactions; smart plug-in as available services through the public networks such as the Post Office and National Lottery; m-services via the available cellular network providers; GovernmentOnline on the internet ; Gateway Service Centres for integrated government services; Talk-to government a service via the available telecommunications infrastructure (CPSI: 2003, p12). All these information services were to be regarded as free except for the traditional transactional ones. The challenge is that the study document was not a policy document; therefore the responsibility for implementation was not successfully pinned down.

1.9 The impact of information society on e-government

While the CPSI was addressing the access issues, the Presidential National Commission on Information Society and Development (PNC on ISAD) was a parallel intervention by government to enable South Africans to leapfrog the stages of development through ICT. The PNC on ISAD was established as a vehicle to "co-ordinate and accelerate development of an inclusive information society in South Africa, aligned with and contributing to the global information society" (PNC: 2010). It prepares and enables the society to respond positively to amongst others the e-government initiatives. The ISAD Plan of 2006 is a clear document to institutionalise the e-government policy. It remains a comprehensive policy and a response to the World Summit in Information Society call for countries to develop plans towards building an information society.

The ISAD Plan of 2006 shall remain a realistic mark to the South African journey to e-government. e-Government is set to ensure efficiencies in the service delivery arena but need to be sure to include the several aspects that are back end activities which determine the success, e.g. enable the streamlining of government's internal processes; strengthen data and information security; enable transparency, accountability and good governance. Government can provide all the above, i.e. Integrated services online, make available access to infrastructure however if the society is not ready for such in terms of e-literacy, e-government shall not realise.

During 2005 and 2007 the DPSA put together an e-government conceptual framework and motivation for e-government implementation. This was after the release of the Batho Pele Gateway in 2004. The department acknowledged that the important first step of establishing a publicly accessible central government services information portal was accomplished. It was then becoming important to extend the possibilities afforded by ICT beyond the provision of static information. The department also acknowledged that "notwithstanding efforts like the Batho Pele gateway, Batho Pele Service Centres, Public Information Terminals (PITs), Multi Purpose Community Centres (MPCCs), etc. There remains a considerable gap between what South Africans expect in terms of service quality and what the government of South Africa delivers"(DPSA, 2008). In a nutshell, SA has some considerable journey to undertake in e-Government process. Introspections on policies, strategies and institutional arrangements on barriers and successes are critical.

There is a general agreement that South Africa has clearly articulated the e-government roadmap which clearly shows the political will. It is however the weaknesses of the policies and absence of governance (coherent strategies and processes) which marks the general failure in the implementation of e-government programmes. One component of e-government which is G2G is taken as a foundation of all proper integrated services and is taking far too long to implement. The delays overflow in the inability of government to bring integrated online services to its citizens, therefore a considerable delay on the uptake of G2C and G2B. Abrahams (2009: p1016) argues that weaknesses in policy does "account partly for a general failure to build actual electronic services or electronic governance with consequential impact on millions of people, businesses and households".

1.10 Reflecting on the problem of GITOs performance

It has been 10 years since the GITOs were established in government departments. The GITOs are individual employees managing ICT in each department and are organised under the banner of the GITOC. It is a forum that advices the Minister of DPSA on policy issue around ICT and government information systems security. The latter does not take anything away from the State security agency and Department of Communication which have the related mandate. The GITOC is a forum where the officers could interact, exchange ideas, share successes and challenges with a sole purpose to foster common solutions and share best practices in government. "The council admits all the national departments GITOs and provincial GITOs as default members. The CIOs of public entities are admitted as associate members" (GITOC, 2011).

While the GITOC advices the Minister of DPSA on policy, the OGCIO is an entity within DPSA that after the consultation with GITOC, informs the Minister on ICT strategy and governance which is then promulgated and directed to government departments for implementation. The council has noticeably changed many areas of ICT in government.

It is important to stipulate the achievement of the GITOs and the GITO council before embarking on the challenges that faces them. The council have influenced the following policy changes to enable efficient service delivery: ICT leadership and governance, ICT procurement and cost reduction, Open source software, Government wide architecture

framework, Minimum interoperability standards. The implementation of the above mentioned documents remains to be evaluated and monitored within departments.

Significant progress of policy implementation and GITOC‘s effort are seen in several projects such as the Track and Trace, Thusong centres and the Integrated Justice System (IJS) designed to have a single view of a person in the criminal justice system. The IJS is the first integrated system that enables departments in the criminal justice system to better manage the tracking of crimes and offenders. It enables the management from tackling arrests, conviction, imprisonment and rehabilitation under the single window of integrated systems. (GITOC, 2011)

A project worth mentioning and is on the planning phase is the integration of the social services. This project has been deliberated by the Governance and Administration cluster and an agreement has been reached to “develop a prototype of the e-government platform” This platform is aiming to automate the six pro-poor services in the social and justice cluster. It aims to integrate, automate and provide a single window to the following services”

- Application to register birth.
- Application for an identity document.
- Application for foster care grant.
- Application for an old age pension.
- Applications for a maintenance order and
- Application to give notice of death. (DPSA, 2005)

The multipurpose centres have been identified as the access centres for such services and therefore a rollout plan should also reflect the intention.

It is however notably visible that the GITOC, GCIO and SITA do not have a coherent strategy for effective e-government projects that transforms the relationship between government and citizens. There are many uncoordinated efforts, parallel initiatives which make it difficult to trace the overall progress of e-government. In the view of the researcher, limited policy direction and the challenges of governance (strategies and processes) with respect to the e-government initiatives may have an influence on the performance of the GITOs. Innovation in any field is complex and requires strong policy direction and good governance in which the GITO is central.

The Minister of DPSA emphasised the importance of the GITOC in no uncertain terms that "GITOC is in the vanguard of helping SA to realise its collective vision of enabling e-government and ensuring service improvement, thereby creating a more efficient and effective government" (ITWeb, 2011). It is therefore the responsibility of the GITO as the business owner and integrator of departmental requirements, to lead in e-government initiatives. In the tripartite relationship between DPSA OGCIO, SITA and GITOC, it is the GITOC that knows where government services are required, the format and possible integration of such services between different departments. Performance of the GITO within the department is vital due to the following:

- GITOs must ensure that the e-readiness of the department.
- GITOs must ensure that the departmental ICT strategy and plans are aligned with e-Government policy.
- GITOs must ensure that departmental business processes are mapped for the development of ICT architecture.
- GITOs must ensure the integration of all departmental ICT requirements, set the departmental standards to enable interoperability and common solutions where possible.
- GITOs must ensure that both the networks and desktops are secured.

Reflecting on their performance as a critical stakeholder in the implementation of e-government policy is crucial. The GITOs are positioned to understand the business of their specific government departments and knows the ICT tools to enable such functions. The challenge is 'why is e-government still in a rudimentary stage after a decade when there are all the structural arrangement that were put in place which shows an effort by government".

CHAPTER 2 : E-GOVERNMENT IMPLEMENTATION AND THE ROLE OF THE CHIEF INFORMATION OFFICER LITERATURE: APPLICATION OF KEY THEMES

2.1 Introduction

Literature review is taking stock and analysing of what has been published around the selected topic of research. It is also referred as an analysis of the body of knowledge in order to elicit deficiencies in the literature or add to the body of already available knowledge. From the guidelines written by Booth, Colomb and Williams (2003) literature review should not review a single isolated study, but should introduce the entire and different views on the topic selected. The aim should be a discussion around the set problem and set the topic within the dialog of literature.

As set by Obenzinger (2005), this literature review aims to provide the meaningful context of e-government and performance based on policies and governance within the context of already existing research. It will also set the basis for analysis and discussion of the findings in order to prompt further research in this field of e-government.

e-Government has become a fast growing field for research with much interest escalated by the fast evolution of ICTs worldwide. This field is diverse drawing all natures of relationships among government, business, citizens and technology. e-Government has become one of the key concepts of information and ICT evolution. Several studies and uptake of this concept has proven that e-government has been “evolutionary and stakeholder-oriented” in the last decade (Ngulube, 2007: 3). The evolutionary part has been proven by different studies and models of the stages of growth as developed by Layne and Lee. Several modifications of their stages have thus been developed within the context of defining the stages of developing a fully functional e-government. These models as adopted in various environment, sounds a mechanistic approach, however they provide a useful tool to evaluate the performance of a country in e-government policy implementation.

It is apparent that e-government policy and literature has shifted focus within the last decade from the e-government that is concerned with efficiency to the e-government that focuses on firstly the citizens demands and efficiency to meet such demands. The literature review

therefore looks at what kind of a society demands e-government services, who are the critical stakeholders in the enablement of this e-government initiatives and are the policies and governance enabling or inhibiting the performance of such stakeholders.

This extensive research that is already conducted in development of requirements of e-government or electronic service delivery by governments is thus analysed for the purpose of shaping this research report. This study is particularly focusing on the exploration of the performance of Government Information Technology Officers (GITOs) on e-government programmes in the South African government.

This research focuses on measuring the performance of the GITOs in e-government implementation within the set policies and governance in South Africa. In order to elevate this research from disconnected observation to its level of significance, the following themes have been thoroughly analysed in the body of e-government literature.

- The information society and e-government.
- The changing approaches to e-government policy and governance.
- The role of the CIOs in implementation of government programmes.
- Performance of e-government technology projects and measurements of performance.

2.2 Understanding information society as an enabler of e-government.

There is no universally agreed definition of the information society however is viewed as a transformed society through increased global information and knowledge exchange facilitated by information communications technologies. The world summit on the information society agreed upon the three elements that constitutes the basis of information society, i.e. Information and knowledge, proliferation of ICTs and access of ICTs" (ITU, 2012). It was also agreed that the many definitions of information society are partial while the concept is broad and affect every cell, sector and activity of society.

Agreed upon by several authors, information society is viewed as a successor of an industrialised economy which was rife in the 60's and 70's. It is a society "in which the creation, distribution, diffusion, use, integration and manipulation of information is a significant economic, political, and cultural activity". (Wikipedia, 2011). Access and ability to use ICTs are fundamental enablers to growth of the information society.

Most industrial developed societies are currently experiencing information society syndrome, where information has become essential, central and indispensable part of their daily activities. A country becomes an information society when information becomes central to social, political and economic organisation (Abrahams, 2009). The emphasis is that information is critical to people's lives, as identified as early as six decades ago by Wiener who argued that "to live effectively, is to live with adequate information" (Mansell, 2010: 23). This argument is pointing out the crucial importance of information and technologies in any social and economic activity of societies.

In his work Castells (1996 & 1998) provides the analysis of the rise to a networked society from industrialisation. He argues that this network society is a new phase of capitalism. He further argues that the causes are influenced by globalisation, total transformation of enterprises that have created the networked communication that is seen today.

Mansell (2010) has agreed that the concept of information society seemed fuzzy in the earlier days. It was because the importance of ICT was based on improving industrialisation. It was intended to enable faster and cheaper information processing around the products. The reality today is that information society is that which many developed and developing countries are aspiring to be in this globalised world.

According to Mutula (2004), the information society is to embrace information in "all aspects of life, and is fully conversant with how to seek and use the information". It therefore meant a society that creates information and knowledge, have the ability to store and distributes this information where it is needed in no time. This is also referred to as "real virtuality" by Castells (1996) due to the usage of the Internet which makes access to information instantly to everyone around the globe. It is a society that caters information for all, including children, the elderly and disabled. It means that the information through the internet has become easily available and has become the symbol from which people live and communicate.

The availability and accessibility of information improves the quality of life and enhance the economic development. Martin (2005) argues that economic development largely depends on information and the way it is exploited. This has been made possible by the increase access to computers, transformation in telecommunications, convergence and access to the Internet.

Universal access to computers, network infrastructure and ability to use the technology are seen as fundamental to achieving an information society. This information society is also seen to be characterised and linked to the increased productivity and lowering of costs. Creating an information society has been viewed as one of the pillars of eradicating poverty and achieving development through ICT by many multilateral institutions.

The World Summit on Information Society (WSIS) was held in two phases, i.e. Geneva in 2003 and the Tunis in 2005, and has established a clear vision for building an inclusive global Information Society. This Summit was a unique two-phase United Nations (UN) summit initiated to create an evolving multi-stakeholder platform aimed at addressing the ICT issues. The aim was to discuss these issues through a structured and inclusive approach at the national, regional and international levels.

ICT was identified as crucial driver for promoting information society, social development and economic growth. Thus WSIS vision of Information Society is a "people-centric, inclusive and development-oriented Information Society where everyone can create, access, utilises and share information and knowledge" (PNC on ISAD, 2008). Countries are encouraged to develop plans in order to meet the developmental goals through ICT in order to achieve information societies. South Africa's response was the development of the ISAD plan in 2006/7 as discussed in the previous chapter.

In the argument that post-industrial societies brought the information age through ICTs, Mansell argues that the creation of global networks by industry sectors and governments was intended for economic and social interaction. The spill out of such activities resulted in the so called information society or knowledge based economy. She further argues that although knowledge is power however "it continues to occupy the slum dwelling in economies" (Mansell, 2010: 25). Information society increases the competitiveness of the country in the entire concept of globalisation by enabling the equal and active participation of many in the economic development.

Information society is thoroughly impacted upon by digital divide. The general assumption however is that bridging the digital divide is intertwined with social, economic and political development. Despite the contradictory positions of the emergence of the digital divide phrase, the term is attributed to the revolution of internet technology that took the world by

storm in the1990s (Mutula, 2008). Addressing digital divide is like building a highway for the rollout and successful implementation of e-government projects.

Wallis (2005: 220) believes that ICT can play a significant role in economic development but "even in comparatively wealthy nations its simple existence will not alter the poverty of aspiration that can be found in marginalized communities". Khan on the other hand strongly objects and voices out that the ICT are tools that can be used to eradicate poverty "...because it makes people aware they have rights. As such, they cannot be marginalized or excluded. It gives them the right to be heard and to participate in the decisions that affect their lives" (Khan, 2006: 10). It is in this sense that many countries have adopted the universal access and universal service as policy and are using it as "...key strategies to attempts to bridge the digital divide within their countries and with the rest of the world" (Mutula, 2008: 470).

Information society brings both good and bad as described by Polyviou. There are social disadvantages that are encountered by the so called information society. In a society where people are bombarded with information through all sorts of media, it altered the natural phenomenon and cultures. People tend to react different to destructive results and others insensitive issues that are accessed and tend to inform their different aspects of life. Due to the amount of information available to people, Polyviou argues that information available holds people "superficially and not substantial to reality". It simply means that people tend to become distant to what is happening around them and tend to pay attention to what is happening far as an escape goat from reality. The consequence is that what does not affect them directly becomes part of their thinking, while they develop some insensitive behaviour towards that which needs their personal attention. A good example is used by Polyviou is that people feel that disasters and tragedies happening are nothing new because they could have witnessed it on television or read about it on the internet happening elsewhere and develop a mental block as and show less sympathy when it happens back door.

Protection of privacy and integrity of information is also one major disadvantage in this explosion of information society. There is an overload of negative data and information available to all who access the internet which has a potential to turn people into a destructive social factor. The explosion of information is so large that it is difficult to control and dispersion of illegal and harmful content in many networks. The threats that are posed include child prostitution, electronic fraud and espionage. Most of the illegal activities that

happened in the streets have been translated into the net and have become sophisticated and widely spread. Polyvoiu concluded by acknowledging that there are greater benefits in information society than drawbacks.

Bhuiyan also look at the information society from the postcolonial perspective and as a tool to further capitalism principles. He places the historical context in order to show how the imperial powers of the North uses information society as a discourse to establish their powers over the South. He argues that the North has created this concept in order to describe the post industrial society where ICT is used as a force of economic growth; where there is a new group of social service workers dominates the economies. He regards this as a model where the countries like United States of America base itself. Challenging Castells on the model whereby there is change in the mode of production from industrial to information, he questions where did the industry work and agriculture go? “Information society theorists are silent on these issues” (2008:105). He therefore believes that information society is a “metaphor that has been coined to feature the contemporary capitalism”. (2008:105). Bhuiyan finally calls for the countries of the S outh to develop their own meaningful alternative information capitalism/ societies. He warns them for just adopting what has worked for the North as it creates even the further unequal information societies in the South.

There is consensus in that ICTs contributes immensely to the creation of information society where technologies are universally accessible and people are literary capable to use them. It is therefore apparent that e-Government success will be determined by the access and ability of the society to utilise the available technologies to leverage the services. Most economies are categorised by urban and rural areas. The two are often characterised by different economic dynamics and systems. The rural areas are associated with dispersed populations and low economic activities. e-Government is yet another vehicle to enable the information society. However an information society can determine the information and services that government can offer online.

Bertot argues that the “The success of e-government will also depend on the acceptance of ICTs among citizens” (Bertot, 2010: 266). It is citizens in an information society where the resistance will be less while those who do not have access and knowledge tends to look away and feel threatened by technology. He argues that there are many places where citizens still prefer in person or phone based service as compared to internet self-service. To link it to the

information society, he argues that individuals with high levels of education already prefer the self service provided for online by government. It clearly indicates that information society is a key to the success of many e-government programmes.

2.2.1 South African government policy and information society

Public policy should recognise and acknowledge that e-governance is thoroughly impacted by the emerging and global shift towards information society. The electronic government policy framework did manage to set out an IT framework through the digital future plans however it failed to present a vision to attain the information society and knowledge based economy. The objective of the policy was spot on "improved service delivery" however the focus areas were more on deriving value from the IT. The focus areas in the policy are not necessarily wrong; however they receive emphasis than the specifications for improved service delivery and a societal development. The policy is weak in identifying the aspects of building an information society such as introduction of ICT is schools and rollout of infrastructure for easy access.

The information society policy framework by the Presidential National Commission on the Information Society and Development puts the digital inclusion as one of its pillars. It is a sign for South Africa's political will to bridge the digital divide and a major shift in public policy. It is however noted by Abrahams (2009) that the proposed strategic actions remain intended statements rather than proposal of solutions like investments in e-services. The policy acknowledges that information society is critical in enabling e-government and successful use of ICT for service delivery.

2.3 Shifts in approaches to e-government policy

The e-government policy in a specific country determines the focus and approach in which the e-government initiatives will take. e-Government uptake has been considerably lower than expected in many countries and as such many had to go back to the drawing boards after a decade of trial and error in this evolution. Likewise in South Africa, many countries have adopted e-government policies as an enabler of the main concept of public service transformation. This concept is also referred to as New Public Management which focused more on efficiency of public services and was mainly driven by performance measurement.

The main framework and objectives of the public service transformation through e-government was based on the thirst to reduce public spending, improvement of public sector performance and perceptions and finally enhancing accountability. This however has neglected some political consideration and many social implications (Bonina and Cordella: 2008). The initial approach in e-government was not to ensure interaction between government and citizens and enhance democracy or processes of governance.

2.3.1 Government-centric approach

More attributes that were observed by Bonina and Cordella in e-Government policies of the past decade are based on transformation of services, government revolution and public sector reforms. They focus more on changing the backend activities of service delivery, downsizing and contracting of several services for better output. The implementation of e-government policies was something closer to the "importation of public sector practices" (Bonina and Cordella: 2008: 5). The practices are characterised by downsizing and privatization of services.

The government centric approach to e-Government initiatives was born out the pressure for governments to transform their services to be in par with private sector offerings. E-Government initiatives in many parts of the world are still embedded as part of the political and managerial transformation of the public sector. These practices are deeply institutionalised to an extent that they are going to continue well beyond the public sector reform. These practices have a potential to hamper the new approach which focus more on a citizen as a customer in development of e-government policies and governance (Bonina and Cordell, 2008).

The fast evolution of ICTs and diffusion of Internet was also seen as power behind the adoption of e-government policy and has therefore shaped the entire policy and governance. E-Government could have evolved earlier and used all other electronic access capabilities like the telephone kiosks etc, before the internet however it has not been seen as the case. It has something to do with the demand side from citizens who were already accessing private sector services in a more efficient way. There is no doubt however that the Internet has enhanced the electronic services in both private and public sector (OECD, 2005). The initial approach of e-government was designed around the main pillars of transforming the public

services. In promoting the e-government policies, the main element that was elevated at the time was the availability of information online and delivery of some services was also features to some extent. This is also confirmed by the stages of e-government development by Lyne and Lee, (2001 and 2003). The concept of streamlining online services was also canvassed although has different meanings to different countries.

Several governments have adopted the use of technologies without re-engineering their business processes. It was simply the automation of the current manual processes with an aim to reduce the manual workload and improve the turnaround times. This was discovered to be the government centred approach at its simplest form. The government centred approach seems to be a default stage of all countries that are in the initial stages of e-government implementation. The government centred approach simply focuses at the benefits from government's perspective rather than that of the citizen, i.e. the cost savings in service delivery, turnaround time for public perception and rationalisation. In a nutshell, the drive to e-government has always been more focussed on the fact that governments will reduce costs and provide technology-enabled services to users in an efficient way.

2.3.2 Citizen-centric approach

The focus of government had to change after full retrospection by many countries. There has been much criticism on who is supposed to be central in e-government, whether it is government bureaucrats themselves or the citizen. If the latter, therefore the policy and all processes should focus on what citizens want or need as a service. The OECD counties have discovered this earlier and in their 2005 report explicitly agreed that "e-Government has the power to create a new mode of public service – a "no gap" relationship where all public organisations deliver modernised, integrated and seamless service for their citizens. The relationship is no longer just a one-way, us-versus - them proposition; rather, it is about building a partnership between governments and the citizens" (UN, 2005).

The new approach to e-government policy is focussed on the perspective that customer service should be driven by the citizens themselves. They are to define services based on their skills, interaction methods defined by the online services they afford and prefer. The Deloitte research group argues that citizens have shaped the new approach to the e-government initiatives. The fact that the same citizen has the ability to interact with friends through emails

and other social networks, so online shopping for variety products and services, manage the personal finances through online banking anytime anywhere has send the waves to the e-government policy implementers.

Citizens demand the one stop shop to services and instant services as currently is the case in the private sector. Citizens as customers in e-government demand "convenience, customisation and empowerment" (Deloitte, 2000:5). The change in approach indicates that governments are listening. In recent reviews of governments, e-government policies of the EOCD countries and strategies, it indicates that the focus on customer service is driven by the citizens.

The recent approach is for government to use the user-centered approach in engaging the citizens and all users of e-government services. The users are a central nerve in the business processes and technology developments with an aim to provide services and resources tailored to the actual service and resource needs of users. Bertot, Jaeger and McCLure argues that "A key issue is that citizen-centered e-government implies that governments know what citizens want from e-government, want to meet citizen expectations and needs, and actively seek to discover what citizens want from E-government" (2008: 8). The e-government services should not only include the common services like applications of birth, marriage, death certificates and sorted lifestyle certificates online but also mature to greater opportunities of citizens participation to democratic and institution processes.

This latest focus which also referred to as a user-centered approach has become the use of technology to provide integrated, secure services to the citizens. The future poses a challenge for interactive governance to enable accountable decision making processes at a click of the button. A call by Wang and Zeng is that the governance issues are to become part of the e-government strategy in the user-centered approach or else all fail, "governance issues are complex and easy to get wrong, but e-government success depends on getting them right" (Wang & Zeng, 2009: 36). The core concept is to insure that the citizens changing needs are core to the design of service delivery.

The new change includes the design transformation of systems from the perspective of the government officials to what is regarded as the service recipient's perspective. In the design stage, the critical questions to be asked were "what do the citizens need"? Meaning that if

there is any gap between what government is currently offering, then the it becomes integrated into the new system design. The radical approached put the two models, namely the agency centric model and the citizen centric model as options. The latter is therefore adopted as the new approach to achieve success for e-government initiatives.

Government-to-Citizen and Government-to-Business is what industry regards as the main objective of e-government initiatives. Although there is a considerable amount of information that cannot be made available online by government, what is critical in the e-government systems design is to ensure a clear distinction and seamless integration with other non-online services. Deloitte also highlighted the issue of many other obstacles that requires the dual systems, i.e., online and manual services due to the access challenges to infrastructure, low internet penetration, literacy levels and physical constraints to children, elderly and people with certain disabilities.

Access is a particular challenge in the countries of the South and all developing nations. Their universal access policies and governance that guides the G2C initiatives are to focus on the balances selection well researched multi- channel access. The policies and governance processes should be flexible and adapt to changes as the technology evolves. The recent example is the move from popular internet and information kiosk as the sole focus of interaction mode to the use of mobile internet and specifically the social media.

2.4 Trends on performance of e-government programmes

In several countries, e-government projects have been a moving target. E-government development and target are not measured solely by ICT diffusion within government departments, but rather by “solid evidence of an approach…that places the citizens at the centre” (UN, 2010: 3). The United Nations further stipulates that e-government is not about the “e” per se, but rather the notion of citizen-centric and participatory governance through ICT.

A number of e-government projects are being implemented by different government around the globe with a promise of greater efficiency and effectiveness in the public sector operations. Heeks argues that the majority of these projects fail and he divides the performances into three categories:

- “Total failure” a category of all projects that were never implemented or abandoned immediately after implementation.
- “Partial Failure” as a category of projects that have not yield intended results as per the requirements.
- “Success” as a category of projects that have attained the major goals and suffer from less unintended outcomes.

Heeks further points that there is little research on the actual performance of e-government projects. It is evident from the literature sought that at least there is 15% success rate of e-government projects. As compared to total and partial failures, there is enough basis for concerns on the performance of such projects (UN, 2003: 2).

The UN e-government index is amongst the recognised and authoritative entities that measure the public sector and its capacity in providing electronic and mobile services. There are various and diverse assessments used in measuring e-government developments; including scanning the government online services, information on e-government policy and strategies and several indicators like the extent of digital divide. The UN Survey authors argue that the statistics information is mostly derived from the supply side and less comes from the demand side. It means that there are few surveys to indicate how citizens view and use the e-services (UN, 2010).

The global e-government readiness index clearly stipulates that African countries rank very low and as a result they need to develop both the utilisation capacity and public access to infrastructure. Kalu argues that African countries lacks political will and requires appropriate leadership in the public sector that will enable public and private participation in e-government initiatives and interactions (2007: 358). The UN on the other hand argues that developed countries have achieved high rankings in e-government development because of the already available telecommunications infrastructure and availability of human capital which requires huge investments (2010: 60). This clearly indicates that African countries will improve steadily and the success of e-government will be determined by political stability, attractive policies and the willingness of foreign investors.

Table 1: UN e-government survey: ten top countries in Africa

Rank	Country	E-government development index value		World e-government development ranking	
		2010	2008	2010	2008
1	Tunisia	0.4826	0.3458	66	124
2	Mauritius	0.4645	0.5086	77	63
3	Egypt	0.4518	0.4767	86	79
4	South Africa	0.4306	0.5115	97	61
5	Seychelles	0.4179	0.4942	104	69
6	Cape Verde	0.4054	0.4158	108	104
7	Libya	0.3799	0.3546	114	120
8	Botswana	0.3637	0.3647	117	118
9	Lesotho	0.3512	0.3805	121	114
10	Gabon	0.3420	0.3228	123	129
	World average	0.4406	0.4514		

Source: UN, 2010.

As indicated in Table 1, South Africa is ranked number 4 in the e-government index value compared to other African countries. As the biggest economy in Africa, one could ask several questions on the decline in performance and the overall drop to number 97th in the world rankings compared to 61 in the 2008 rankings. Besides all the preparation for the 2010 FIFA world cup, South Africa suddenly lags behind three African countries with an average value of 0.4306 while the world's best performer is Republic of Korea on 0.8785. Literature points the failures of e-government in South Africa are due to adoption of technology without accompanying appropriate skills to manage and integrate them. There is also evidence of disjuncture between the national and local governments in the adoption and use of technologies.

There are also resounding successes in the few projects that have been implemented. Since 2004 the Independent Electoral Commission (IEC) has partnered with cellphone providers to enable the voters get information on their eligibility to vote and the voting stations details. South African Revenue Services (SARS) has enabled citizen to perform the e-tax filling and related transactions online. The electronic National Traffic Information System (e-Natis) allows citizens to apply for all licences and related transactions and the system is currently being rolled out at Post offices. Plans are underway for adoption of the same system in the SADC countries. Why is there success in some departments and failures in others when there is a GITO Council to coordinate projects and share best practices and experiences?

2.5 The changing role of the CIO and the critical success factors in the implementation of e-government

2.5.1 Evolution of the ICT management function

In the early 1990's the Information Systems executives characteristics has undergone a sever transformation. New functions were added such as "strategic technology and control, IT architecture management, IT standards development and human resource management" (Chun & Mooney, 2009, p324). Prior to transformation, the IT managers were viewed by their peers in business as data processors or systems and networks managers and nothing close to the CIO role. They were responsible to make technology work rather than enabling business to its efficiency. This has influenced the transformation whereby CIO are viewed as strong technologist rather than the balance of all strategic capabilities that are required for the CIO. IT departments have always been standalone in nature; a breeding ground for silos within business lines and encouraging limited cross-functional interaction (CIO, 2012).

The title of the Chief Information Officer (CIO) was only established in the Mid 1990's when the role of an Information Systems (IS) executive became even more strategic since the dawn of e-commerce in private sector and e-government in the public sector. It was just a decade ago with the rise of the Web and Java programming that the profession was intensely transformed. The web tools enabled the re-engineering of business processes across enterprises making it feasible to change the effectiveness and efficiency of businesses. Throughout the decade, CIOs have to horizontally integrate processes and best understand all aspects of the business. When business leaders realise the potential to integrate the business processes through ICT, the CIO position assumed the meaningful position within organisations.

Soon after the rise to their importance, CIO had to deal with the fact of justifying their importance to their CEOs and other executives. CIO's had to justify their big budgets while the return on investment offers very little value to the organisations (Chun & Mooney, 2009). CIO's in the public sector were also faced with similar dilemma.

2.5.2. The CIO of the 21st century

The CIO of the 21st century is a strategic function that initiates and provokes organisations to change their processes to be influenced by IT. The CIO is now required to possess both IT skills and strong business focus (Chen & Wu, 2011). This position requires the ability to be a functional head who delivers on promises, a strategic partner who aligns IT with business and a visionary who drives strategy.

CIOs of the public sectors are responsible for e-government that presents a number of organisational, managerial and technological challenges. Lee ascertains that the complexity is due to involvement of several or multiple stakeholders (2010: 229). The challenge is exacerbated by the fact that there is no single way established to implement e-government. Yoon and Chae also argue that the right way is to invent a suitable method locally (2009: 27). This clearly means that critical success factors of e-government are to be applied in a certain context of each environment. South Africa would therefore implement e-government in a context of a developmental state considering the whelming unequal societies and it is a country within a continent known to be a sea of poverty.

It is pointed out that the inability to manage large IT projects is one of the common possible failures of e-government projects. This phenomenon has become of particular dominance in the public sector (Dovifat et al, 2004). United Nations sums up the impediments of e-government developments as a culmination of fragmented information systems, organisational complexities and deficiencies in ICT skills in the public sector work force. They also argue that these challenges are not exclusive to developing countries only (UN, 2010).

Although SA has articulated well the service delivery principles, they are to be implemented amongst the midst of several inhibitors like high level of poverty, inequality, corruption, insecurity, illiteracy and skills shortage (Mutula, 2010).

CIO's are a central focus from planning to implementation of ICT projects. Their performance in the private sector is clearly visible as their innovations and projects yield return on investments through the profit margins. However in the public sector CIO is not measured by the simple adoption of IT as this might not guarantee the intended results of

excellent service delivery. There is correlation between the IT capabilities, levels of investments and the productivity in the organisation in measuring the success of e-Government programmes. The latter has however nothing to do with the CIO's performance (Varajão et al: 2010).

The CIO's performance can be measured using different frameworks. Chen and Wu (2011) prescribed the IT capability role as a way to measure the performance of CIO. They argue that a CIO should possess at least three main capabilities and skills as listed below in order to reach maximum impact in any organisation.

- Business domain knowledge in order to introduce new business processes and models;
- IT skills and competency in order to align business with IT and put in place solutions and infrastructure that respond to the business needs;
- Interpersonal skills in order to facilitate relationship between the users and technical staff and also to become an informed buyer. It means that the selection of external resources will maximise the effectiveness of internal resources in a cost effective way.

Seventeen challenges and opportunities of e-government implementation have been outlined in the literature. They include" infrastructure development, law and public policy, digital divide, e-literacy, accessibility, 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" (Ngulube, 2007:5). All these activities have to some large and lesser extent the involvement of the GITO and effect in their performance.

The following are regarded as some of the critical success factors in the implementation of e-government particularly in developing countries:

2.5.3 Critical success factors for CIO performance

2.5.3.1 Costs and funding

Funding model is to take into consideration during the planning of e-government projects. Budget allocations and technical spending skills are some of the key competencies of the CIO as argued by Chun and Mooney (2009). It is however close to impossible in the case where

CIO are faced with shrinking budgets while expected to deliver expensive integrated solutions for effective government administration. Cost to the benefit ratio is but one of the proven methods for developing countries. Most administrations would not afford the costly IT systems, network infrastructure and qualified personnel to implement their e-strategies. Schuppan argues that the cost benefit or return on investment (ROI) in this regard is the improved and inclusive service delivery (2009: 122).

United Nations (2004) has put together questions in considering the funding methods of the e-government programmes. Are the costs involved in e-government outweighing the available budgets and what will be the timeframes to recover such costs through the anticipated savings? The idea will therefore enable a decision to the funding strategy that could be adopted. It is however argued that "It is in fact possible that savings may never overtake the costs so that e-government, while sharply improving services for those able to take advantage of it, may remain an additional cost" **(**UN, 2004:10). The nature of e-government projects are not designed to save government some costs but rather to enable government improve on the efficiency of serving its citizens.

CIOs should be able to recommend the best funding strategies. It is also noted that public sector CIOs operate in a highly restrictive and regulated environments (Gil-Garcı´a and Pardo, 2005). The budgeting cycles and frameworks of government are usually fixed and not flexible for large and long term ICT projects. The effects of these rigid budgetary regulations affect performance of CIO in a negative way, leading them to perpetuate the current status in governments.

CIOs of the public sectors are called to consider the various ways of funding the e-government initiatives. UN calls for strategies that consider a balanced approach in risk taking which includes the involvement of the private sectors. The study further argues that "change involves the taking of risks, while the absence of competition in the provision of public services ensures the perpetuation of the *status quo*" (2004:11). The involvement of private sector is considered to bring the following benefits: skills, efficiency of service delivery; separate operations from political intervention; responsive to the public's needs and preferences and shared risks of failures.

The involvement of private funding initiatives like the Public private partnership, outsourcing and private funding through bonds brings along other management challenges for the CIOs. The private sector involvement requires a high level of complex contract management skills within the public sector, and ensuring the privacy and security of government data and information. CIOs are then to ensure and convince both government and citizens of the privacy and security of the personal information and online-transactions through continuously updated encryption technologies.

2.5.3.2 Infrastructure

The economic inequality in any society usually replicates itself in a form of digital divide. It is a case in South Africa whereby network infrastructure is concentrated in cosmopolitan areas. Neglect on the rural areas is a source of concern since the majority of the citizens in developing countries are still rural dwellers and e-government's principal client. Alternative wireless technology is available at an unaffordable rate by the same majority stated above. Helbig argues that "knowing and acting on digital divide issues may help increase the success of e-government" (2009:95). e-Government and digital divide strategies are to be viewed as a complementary phenomenon although the latter is not driven by the CIO.

Lack of telecommunication infrastructure in Africa is a phenomenon and has since restricted the use of the Internet and the adoption and success of e-government. Where infrastructure is available, especially in cities and metropolitan arrears, the costs of internet connections is beyond the affordability of the majority. Since ICT "foundation is weak and there is no universal access to the Internet", the situation has added into the difficulties that public sector CIOs have to initiate a breakthrough in e-government policy implementation (Ngulube, 2007: 43).

The rural areas of South Africa also suffer from irregular or non-existent electricity which turns out to be a major barrier in the use of the ICTs. Power outages especially in winter months are frequently experienced and this hinders the citizens the potential to utilize ICTs which in return could promote social participation and improve government efficiency. There is generally a huge inequitable access to ICTs like personal computers, Internet by individuals or groups of people in South Africa and this disparity has caught up with government CIOs regarding the failures to roll out e-government programmes. This lack of

ICTs just reflects the level of e-readiness of the South Africa society (Mutula & Mostert, 2010).

2.5.3.3 Human capital

Lack of certain ICT skills in developing countries is a phenomenon although it is diminishing with time. The UN through its e-government report has noted the shortcoming and trend in the middle and low income countries. It is also noted that the situation is worse in the public sector because the top cream in the ICT sector tends to divert to commercial firms. Government is ideally used by young men and women as a path to acquire experience "to make them marketable in the more lucrative private sector" (UN, 2010:5). There is however examples of developing countries like Malaysia and others that have leap frogged this challenge and have performed well in the 2010 UN survey on e-government.

e-Government has also been largely driven by few technocrats in government with little consultation with the users. This is highly relevant to the relationship between governance and performance. Bertot and Jaeger also argued that the failure in most e-government projects was due to failure in asking the following question "Did the user actually want or could actually use what they were given" (2006: 165).

The complexity of IT projects, fast evolving technology brings constraints to human skills and has affected many organisations. Barki, H., Rivard, S., & Talbot, J.(1993) have argued that lack of relevant and dynamic skills within the project teams that are set up by CIOs can be a critical factor that constitute failures. The shortage of critical skills in South African public sector is exacerbated by the "brain-drain of skills by developed countries and the private sectors" in pursuit of better conditions of service (Mutula, 2010: 44). The least available skills are the old technocrats that are maintaining the legacy systems and less skilled in new technologies.

2.5.3.4 Structural arrangements

In order to manage e-transformation in the public sector, careful consideration and attention should be paid both to functional and structural arrangements. Many governments have realised the lack of direction in ICT and its management and thereafter redefined the function and position of CIO. They were considered as "emperor builders" and their roles were not

carefully defined and as a result created animosity with other business executives (Gupta, 1991).

The purpose of e-government is to utilise ICTs across government as such careful consideration should be taken in the institutional and structural arrangements. Like the private sector where the expectation is that CIOs are contributors to strategy, innovation and organisational success, government departments should appoint CIO's who are capable to plan, execute and monitor the implementation of e-government projects as they integrate government services. Hence, the conceptual framework for this study utilises the concepts of policy, governance and performance to investigate the role of the GITOs in the e-government innovation initiative.

CIOs are faced with lack of alignment between organisational objectives and ICT applications that are deployed and the structures to manage large ICT projects. Gil-Garcia and Pardo (2005) asserts that CIOs in public sectors are challenged by multiple and sometimes conflicting goals, sometimes it is the individual interests and behaviours which resist change that poses organisational challenges.

Andersen, D. F., & Dawes, S. S., (1991: 55) identified the "general institutional framework and policy environment in which the organisation operate" as the factor that can enable success or inhibit the CIO in implementing any ICT project. It is difficult for a CIO within the structures of public sector organisation to integrate business processes and solutions where the departments and units "act as independent and autonomous units without taking into account what other public organizations are doing (stove pipes) (Gil-Garcia and Pardo, 2005: 193)". The efforts to integrate services for successful e-government programmes are constrained by the silos within and across government departments.

In conclusion, the performance of the Government Information Technology Officer (GITO) might be dependent or affected by the costs and availability of sufficient funding for projects, availability of infrastructure, critical ICT skills and structural arrangements within the organisation. Since this has been proven to be applicable to the private sector, the next chapters will enable the study to discover the relevance to the public sector and other success factors or barriers that are encountered by the GITOs.

CHAPTER 3 : FOUR CASE STUDIES

3.1 Introduction

This chapter outlines the methodology adopted in this research report. The overall research paradigm that has been adopted for this study is analysed and justified. The initial focus of this chapter is on the research design approach which has been identified as the qualitative approach. Then the research design based on the case study approach is discussed and justified. The chapter further discusses the different data collection methods, (i.e. in depth interviews and documentation analysis) process of identification of participants and sampling rationale. It later describes the data analysis method adopted which includes the triangulation of data. Lastly the chapter makes visible the limitations of the methodology, ethical issues considered, reliability and validity of the approach adopted that informs this research report.

Research methodology and research design are sometimes used interchangeably which can be confusing, it is therefore prudent to clarify their differences and how the concepts have been adopted in this study. Babbie and Mouton distinguishes between the research methodology and research design in a form of an analogy. They argue that “researchers often confuse the two but these are two very different dimensions of research” (2004: 74). They argue that research methodology focuses on the research process and the kind of procedures to be used while the design adopts certain methods of sampling, data collection and focuses on the end product.

Research methodology lays down the principles governing the research activity. It is more than a collection of methods and defines set of rules, principles and formal conditions to guide a scientific inquiry in order to organize and increase the researcher’s knowledge about phenomena (Gelo, Braakmann and Benetka, 2008). They also argue that different design is implemented by a different method. The methods spell out the procedures and techniques to be used in data collection, analysis and interpretation.

Silverman (2006) clearly distinguishes the methodology from methods. The prior being a coherent group of methods that complement each another and together delivers data and findings that answer the research question. It is referred to as the general approach to study a

research topic. The latter, reflects the specific techniques of data collection and analysis. Silverman, 2006: 36 further refers a researcher as the "methodologist-in-action" meaning that the methodology and methods selected should ultimately answer the research question.

3.2 Context and significance of the study

No study has been undertaken in South Africa to evaluate the performance of government information technology officers in the implementation of the e-government policy. There is further no study to investigate the reasons of success of e-government projects in some Government departments and total failure in others while the GITO Council is the hub of sharing best practices amongst departmental CIOs. The barriers and critical success factors as identified in the literature review are going to be evaluated against the e-government strategies and plans in selected departments on this study. The study will supplement the lack of information in the area of e-government performance and will be valuable for the policy makers, the GITOC in putting together the governance for successful implementation of e-government.

3.3 Problem statement

The expectation of better and efficient services through e-government is not unique to South Africa. The South African government has followed the global trend and put in place many initiatives to improve service delivery through e-government. Service delivery protests have occurred in the post-apartheid administration because of poor quality services. The e-government programme introduced in 2001 intended to provide efficient and cost-effective services to citizens. The Government of South Africa has promulgated enabling policies for social services, general citizen services and laid down massive ICT infrastructures which are not effectively leveraged to enhance e-services to the citizens. Various government departments embarked on a number of initiatives for example, Batho Pele portal, SARS e-filling, e-Natis, track and trace of applications for birth certificates or social grants. Farelo and Morris (2006:11) regard the "state of e-government to be at a rudimentary stage" in South Africa and e-government readiness rankings show a decline in performance to 97 out of 191 countries in 2010 compared to 61 out of 192 countries in 2008 (UN, 2010).

South Africa has put in place institutional arrangements for coordination and alignment of the business requirements of departments for e-government services. These institutional arrangements include the activities of government information technology officers (GITOs).

The performance of the GITOs is guided by policy and strategy from the government chief information officer (GCIO) and implementation is effected by the State Information Technology Agency (SITA). The problem identified for investigation is the apparent ineffective performance of GITOs in introducing e-services and implementing e-government policy. This may be due to the lack of effective policy and strategy, or inappropriate institutional and governance arrangements or other reasons which are not yet known.

3.4 Purpose statement

Governments in the high income economies have adopted the practice of e-government with the aim to improve the quality of services to their citizens, efficiency in interacting with the business sector and rationalising their internal administrative processes. According to Cordella (2007: 266), the interest in the public sector was stimulated by developments and successes of e-commerce in the private sector from 1995 boom. Many countries in medium and least developed countries followed suit with similar and added objectives that includes efforts to bridge the digital divide and build information societies. While both developed and developing countries have attempted the journey, the results have been different depending on the objectives according to set policies and strategies.

The South African government adopted the 2001 e-government policy to offer convenient, cost effective e-services to citizens within easy access, irrespective of location. The purpose of this study is to explore the role of government information technology officers and their performance in the implementation of e-government policy and strategies as championed through the GITO Council in the past decade. This study investigates successes and barriers to the effective implementation of e-government, including issues that pertain to the existence of ICT policies, ICT strategies, funding, skills, governance and leadership. The structural arrangements and mandates of the GITOC, government CIO and SITA will be investigated and analysed. The intention of the exploration is to elicit findings and consider policy recommendations for successful implementation of e-government in the future.

3.5 Research Questions

The central research question is:

> How is the implementation of e-government policy affected by the performance of government information technology officers (GITOs)?

The following sub-questions are to be asked:

1. How did the e-government programme perform?
2. Why is there success in some departments and failure in others when there is a GITO Council to coordinate projects and share best practices and experiences?
3. What are the barriers and enablers faced by the GITOs in implementing e-government policy?
4. How does the performance of the GITOs impact the emergence of e-government?

3.6 Research paradigms

A paradigm is a set of beliefs that deals with first principles or the world view that guide the researcher. The assumption made when trying to solve problems or investigate barriers to investigations should always be examined for their underlying philosophical paradigms (William, 2006). The philosophies are the analytical comprehension of reality. Guba & Lincolin (1994) highlight three basic questions that philosophers put to themselves as they struggle to understand how a researcher come to know what they know.

The philosophies are based on ontology, epistemology and methodological assumption based on the individual's place in the worldview and the relationships to that world and its parts (Guba & Lincoln, 1994). These assumptions have a stance towards the nature of reality which is ontology; researcher is driven by what he or she knows (epistemology) and the methods that are used in the research process (methodology). The above philosophies are based on the following assumption and address the following questions.

(1) What is there that can be known or what is the nature of reality?
This is considered an Ontological question. Ontology is concerned about issues of existence and conceptions of reality. Different philosophers provide different answers to this type of question, thus can be used in different studies. So it is simply about the consideration of being. Scientists have mainly operated within the two ontological extreme approaches, namely realism and nominalism (Grant & Perren, 2002) and this study adopts the realism approach.

(2) What is the relationship of the knower to the known?

The question can also be phrased in the following way: How can we be sure that we know what we know? These are called epistemological questions. Epistemology is the philosophy that deals with the origin, nature and limits of human knowledge.

(3) What are the ways of finding out knowledge?

How can one go about finding out things? This is referred to as methodological questions. Methodology is the more practical branch of philosophy that deals with methods, systems and rules for the conduct of the inquiry. According to Dadich & Fitzgerald (2006) this should be guided by the ontological and epistemological orientations, and it should also be acceptable to the discipline of the researcher.

Creswell confirms that the researcher embraces the idea of multiple realities when conducting a research. The epistemological assumption is that a researcher tries to get as close to the participants in order to get to understand what they are saying or experiencing. This brings value to the study which Creswell refers as axiology (2007:18). The methodological assumption is characterised by "inductive, emerging and shapes the researcher's experience in collecting and analyzing data. The researcher follows the inductive logic, from the ground up rather than entirely from a theory or perspective of the inquirer" (Cresswell, 2007:19).This is reflected in most instances by the changes in research questions during the study to better understand the research problem.

The world view shapes the practice of research. The four elements stipulated by Cresswell are postpositivism, constructivism, advocacy/participatory and pragmatism (2003 & 2007). This study is being conducted in realist ontology and positivist epistemological environment of the Government Information Technology Council of South Africa in which the researcher is part of and therefore it brings a subjectivist approach. The ontology chosen to underpin this study is based on interpretive paradigm or lens. Cresswell (2007) states that using the interpretive lens can lead to the end of the project calling for transformation or social justice. In many instances the projects or research reports concludes with prescription of steps for reform or actions to institute changes.

3.6.1 Interpretive and critical theory

Creswell (2007) regards the interpretive communities as operating at a less philosophical level. He further defines interpretive position as that which shares some features with qualitative research. It is grounded in the assumption that features of the social environment are constructed as interpretations by individual researchers. These interpretations tend to be transitory and situational and in most cases represent the marginalised groups, being by culture, race, gender or any form of disabilities. This interpretive stance is emphasised by the procedure in which data is collected, analysed including evaluation standards and ethics.

Neuman (1997) also argues that interpretive approach holds that social life is based on human social interactions in a socially constructed meaning system. That human action acquires meaning among people who share it and interpret it socially through actions. Therefore interpretive researchers studies meaningful social actions with an aim to understand social life and how people construct meaning in natural settings.

The study is based on mixed approaches, which value the impact of context in how we seek new actionable theories. According to Cresswell (2007) critical theory is concerned with empowering human beings to be able to transcend the possible constraints they have. Critical theory promises an emancipatory potential from a research study. It enables a more evaluative and critical stance, and it provides for the ultimate goal of change, which also fits best with this study of exploring the performance of certain individuals (GITOs) in the implementation of the e-government policy.

This also means that reality is exposed at the persons targeted for emancipation. Critical theory therefore has special scope for transformation actions that emerges from challenges facing individuals. This point is highlighted in many critical theorists' papers. For example, 'Critical theory paradigm driven research promises an emancipatory interest which seeks to free individuals not only from their domination of others, but also their domination by forces which they themselves do not understand'(Lynch, 1999:48).

3.7 Research design and methods of data collection

Qualitative researches does not rely on a single data source instead, researchers will gather multiple sources of data ranging from documentation, interviews and observations. The data

is then reviewed and made sense of in a form of organising them into themes across various data sources. In order to come into the conclusion, this study is going to follow the similar approach in design. According to Gelo, Braakmann & Benetka "A research design is the plan of actions or structure which links the philosophical foundations and the methodological assumptions of a research approach to its research methods (see next paragraph), in order to provide credible, accountable and legitimate answers to the research questions (2008:p272).

Yin (1996), describes a research design blueprint of research that guides the researcher on how to collect, analyze, and interpret findings for the study. It is a logical model that allows the researcher to draw conclusions relating to the substantive area under investigation. Research design is based on the type of question to study, identification of relevant data and the manner in which the data should be analysed. The research design will therefore describe the plan on how the study is going to be conducted. Based on the philosophical approaches of interpretive and critical theory adopted above, the to explore the performance of the GITOs in implementation of the south African e-government policy is going to be conducted in a qualitative case study approach.

3.7.1 Qualitative case study research

Qualitative studies follow a naturalistic design which focuses on studying the behaviour in natural settings. The fundamental assumption to this is that "behaviour is best understood as it occurs in its natural contexts, without external constraints or control. The natural context of observation, instead of being regarded as a source of variability to be controlled, is considered essential for a deeper understanding of the phenomena under investigation. Naturalistic designs include, among others case study designs, which involve an in-depth, longitudinal examination of a single instance or event called case" (Gelo at al, 2008: 272)

Creswell (2007) defines the qualitative case study inquiry as the method which involved a choice of exploring an issue in one or more cases in a bounded system.

Qualitative research has different approaches of inquiry such narrative, phenomenological, biography, grounded theory, ethnography and a case study. The case study approach allows the researcher to select three government departments for tan in-depth inquiry in the implementation of the e-government policy. Adopting a case study approach and focussing

on multiple cases enables researcher to gain multiple context into the inquiry. It also shows the multiple perspectives in the issue. Although Yin, 2003 argues that the principle of case studies is to use the logic of replication, it can be true to some extent. The general rule and principle of qualitative researchers is to be as far as possible from generalisation of one case to the other since the context of different cases may differ (Creswell, 2007). A case study is also suitable where little is known or less understood. The measuring of performance of the GITOs is a new phenomenon in South African public sector. That is also the case with the evaluation of the e-government policy.

Where a researcher studies two or more cases, then the cases should be different in a certain key ways. In the three cases that are selected for this study, one department is large and complex with many e-government failures, while the other is large, complex and has performed well. Another case selected was a small department that has neither done good nor bad in implementing the e-government policy. The complexity and diversity of the three departments has proved excellent and representative to study this phenomenon.

Case studies according to Yin (2003) are focuses on how things happen and why, they also allow the investigation of similarities and differences bases on what was initially planned and what actually happened. In this study, the government policy for e-government is a yardstick to all departments which denotes the similarities, while strategies and other governance processes could differentiate the cases. The fact that the selected departments vary in size and complexity also denotes the differences however success is measured through the same yard stick.

The selected case study approach has both weaknesses and strengths. Gummesson (1991), reveals the main strength of the case study approach that it enables the researcher to get the holistic view of the series of events and provides the overview of a certain phenomenon under inquiry. This is possible through the use of multiple sources of evidence used. The larger the casting of the net of sources, the more holistic the view is opened.

The possible weakness of the case study as mentioned by Johnson (1994) includes the following: The scientific rigour in the case study research is heavily dependent on the skills of the researcher; secondly, when materials and data gathered are unique, it will be difficult to compare the similar situations and therefore recommendations could be baseless. Finally

if access to similar phenomenon is not even, reporting might be jeopardised by issues like time and availability of comprehensive documentation. These weaknesses are to be built with the design of data collection in order to reduce the limitations to be reported in the study.

3.8 Selecting the sample

3.8.1 Sampling methods

In the interpretive paradigm, there are two common ways of selecting samples. There is purposeful or random sampling. Qualitative researchers usually use the purposeful sampling methods for a couple or reasons. Leedy & Ormrod (2005) recommends that a criteria needs to be set before heading to the field to collect data. The results of the criteria to be used stipulate the size of the sample and diversity that has to be achieved. The criteria will help to include and exclude the participants in the inquiry.

Sample selection is and process that help to narrow down into the inquiry and focus on those respondents that will answer the research query. A criterion of sampling is more often based on how much time is to be spent on the study, depends on the number of people collecting data and the importance of categories to be focussed on in the collection of data.

Creswell (2007) argues that sampling in interpretive paradigm is to be focussed and purposeful. Qualitative research are mostly based on purposeful sampling and the principles adopted is rather inclusive than random. The other guideline given is that the sample should represent a fair population or the body of knowledge. There is a purpose in the selection of both cases to be studied and participants to inquiry.

Creswell further recommends the use of more than one strategy in sampling. The common typology used for sampling is “maximum variation” which is based on the documentation of variations while identifying common patterns (2007: p128) Sampling is done in various levels, i.e. site level, event level and participant level. A good plan should follow a certain strategy and indicate the different levels of sampling (Creswell, 2007). This research report has adopted the purposeful sampling methods based different criterion.

Table 2: Sampling strategy

Event	Process	Participant
e-Government Policy Owner	ICT Policy office- OGCIO	1.GCIO 2. Chairperson of GITOC
Requirements owner	Service delivery departments and agents - 3x Large complex departments – one with successes, one marked with failures and one specified in the DPSA policy 1 small department – e-government implementation less considered SITA as a the Primary Systems Integrator for Government	3. GITO form SARS 4. GITO from Home Affairs 5. GITO from Department of Basic Education 6. GITO from Arts and culture 7.The e-government project manager from SITA
Independent views	Academics	8. Author and analyst in e-Government

The sampling strategy in table 2 is based on the maximum variation typology. It identifies three critical areas and events that affect the selection of both the sites and participants in the inquiry. The critical areas that affects the implementation of e-government policy starts from the policy owners' (DPSA), then the requirements owner, (government department and agencies) and finally the systems integrator which is SITA. Within the identified context also referred as events further sampling determines the relevant participants amongst many who are involved in e-government implementation. In order to bring diversity and different perspectives, the independent views towards the policy and implementation thus the inclusion of the Academic institution in the sample.

3.8.2 Sample size and participants

Selecting the sample size is directly influenced by the research purpose, the problem under investigation, the data collection strategy above and the availability of information as referred to rich cases (McMillan and Schumacher, 2006).

In selecting individuals or sites for the research study, Creswell (2003) argues that 'purposefully selected sites or individuals' would help the researcher to further understand the research purpose, research problem and research question (Creswell, 2003:185). A researcher cannot evaluate every aspect under the sun that is related to the inquiry; therefore a small sample of the population is advisable to study a certain phenomenon. It is also similar in this study, due to complexity of e-government implementation and number of government information technology officers to implement such policy; the departments selected will only represents a small sample of the population.

For selected case studies, Creswell (2007) advices that no more than four to five cases should be selected for the study. The number provides an opportunity to identify themes in cases and conduct intense cross case analysis. Comparison is also manageable with a lesser number. It is also encouraged to select the unusual cases and fully describe the multiple perspectives.

Babbie and Mouton (2004) also stipulates the manageable number and come short of prescribing the number of participants in an interpretive study. According to them " A general rule of thumb indication of South African master's level of study in the interpretive paradigm is between 5-20 or 25 respondents, depending on the nature of the study and number of times you will repeat data gathering techniques such as interviews with each respondents" (Babbie and Mouton, 2004:287).

Table 3: Participants to the inquiry

Categories	Number of respondents
DPSA	1
GITOC	1
Government Departments	4 - GITOS
SITA	1
Academics	1
Documents	**3**
Total	**11**

For the purpose of this study eight participants were identified to be respondents as shown in table 3 above. Successful implementation of e-Government in South Africa is influenced mainly by the three entities. The mandate lies in all the three areas as stipulated in chapter 1. The DPSA in the capacity of the GCIO is the policy owner and monitors its compliance in government. It has therefore seen it necessary that the GCIO is identified to ascertain the level on implementation of the policy and identification of challenges from the policy perspective. The GITO Council as the advisory body to the Minister of DPSA also has a mandate to drive the implementation of e-government. The council is also to ensure that there is sharing of common solutions and best practices amongst the GITOs who manages the e-government initiatives. The Chairperson of GITOC is identified as relevant and purposeful participants in the inquiry. The four GITOs identified from the four case studies are core in answering the critical performance questions as they are directly involved with both the policy, SITA and the citizens. The primary client of e-government is the citizens and their only contact is the government departments where they demand and receive the services. SITA's mandate is to deliver integrated systems as per the requirements of the GITOs. If their principal objective is to enable government to deliver services to the citizens, their role is critical in the performance of the GITO and the overall implementation of e-government. The Chief Operating Officer at SITA manages the e-Government project office and thus a purposeful participant in this study. From an independent and analysis view, the author and analyst in the field of public policy and e-government has been identified as a participant. The three documents were also analysed as part of data collection, i.e. the e-Government Policy of 2001, the South African e-government strategy of 2005 and the analysis document from an independent author of the evaluation of e-government in South Africa.

3.9 Mechanism of data collection

Leedy & Ormrod states that in qualitative research "potential sources of data are limited only by the researcher's open-mindedness and creativity" (2005: 143). This study thus adopts the two mechanisms of data collection, i.e. documents analysis and semi structured in-depth interviews.

3.9.1 In-depth individual interviews

In-depth Interviews, also known as intensive interviews are well-accepted as a valid tool for collecting qualitative data (Charles et al. 1985, Babbie and Mouton, 2004 and Creswell, 2003 & 2007). Interviewing means the researcher asks questions of participant and then records the answers. The word “depth” is brought in to highlight an intention of trying to get a deeper understanding of answers by further getting to the reasoning behind the answer. The idea is to get below the motivation of what is being said or the underlying notion of what has been said (Babbie and Mouton, 2005).

The method goes past just getting superficial answers, in contrast to questions. The challenge is for the researcher to be objective when the very nature of this method means that – a researcher and participant are co-producers of knowledge (Creswell, 2007). The success of the technique relies on the structure of the interview, interviewing style and the types of questions asked (Creswell, 2007).

Direct conversation or dialogue in the interviewing environment must be welcoming and non-threatening for the participant to reveal not just answers but also what is behind such answers. The aim is to elicit inner views of the participants, whether conscious or unconscious of what is being revealed. This can come out through free response by the interview participant. Semi-structured interviews with open ended questions are known to encourage participants to be in a state of revealing all (Charmaz 1991). Less rigidity in the interviewing structure and further probing on responses can allow the researcher to get a depth of response.

The interviewer requires alertness and good listening and questioning skills to provide for deeper reflection (Creswell, 2003). The challenge here lies in the skill of the interviewer. In-depth Interviews in this study are planned for all the eight participants as reflected in table 3.2 above. In total, eight in-depth interviews are conducted in this study.

The major advantage of interviews is its adaptability. A skilful interviewer can probe more by following up on ideas from the responses. These are some of the things that cannot be achieved with a questionnaire. Leedy and Ormrod have also spelt out come important considerations when generally conducting interviews with all respondents that are adopted by

the researcher. The following guidelines have been adopted due to the fact that the researcher categorise herself as a novice in in-depth interviews:

- Drafting of the same question in order to steer the interview to the direction that is productive. This will also ensures that all questions are answered during the interviews.
- Finding a suitable location. Although the location will highly be depended on the interviewee, the researcher will also encourage a quite spot where there is less disruptions.
- Request permission formally. Formal letters are sent by emails to explain the purpose of the study, request an interview session and intentions of using the results. The researcher also promises the interviewees a copy of the results or abstract of the report.
- Establish a rapport and maintain it throughout the interview. The first conversation should break the ice and then swiftly get into the interview. Use the encouraging gestures and words although being careful to put words onto the researcher's mouth.
- Capture all the verbatim responses. It is important to capture everything said by the respondents. In my case, both short hand notes and tape recorder is used.
- All the responses will not be necessarily factual. This means that the researcher will capture it and try by all means to keep the reactions to herself.

Extra care is taken to ensure that should there be reservations by some individuals to respond to other questions, the researcher will adapt some questions on the spot in order to accommodate such situations.

3.9.2 Documentary analysis

For triangulation purpose, this study has also analysed some pre-identified documents. Documents are important sources to make inferences to other events. Creswell (1997) also cautions that researchers should be cautious in evaluating the accuracy of records used. Establishing the author and status that the records hold in the study is the key to selection. Creswell further (2007) indicates that the daunting task in document researches is locating the authentic material. Often the documents are classified or certain bureaucratic organisational process has to be followed to obtain such materials.

This research report has analysed the e-government policy or 2001 developed by DPSA, the e-government strategy for South Africa as promulgated and monitored by the DPSA. The report further analysed the independent evaluation report on South Africa's performance on e-government authored by the analyst and author of public policy from an academic institution.

3.10 Ethical considerations

Qualitative researchers face many ethical issues and challenges when collecting data during analysis and in the dissemination of findings and final reports. Creswell depicts the ethical issues in groupings as follows: there are "informed consent procedures, deception of covert activities, confidentiality towards participants, benefits to participants and requests that goes beyond social norms"(2003: 141). The letter to participants included all information required in order to ensure an adequately informed participant. Confidentiality to the agreed upon aspects during data collection was adhered to and an unnecessary and controversial information is not recorded in the findings. The researcher in this study has exercised caution and diligence regarding ethical issues.

3.11 Validity and triangulation

3.11.1 Validity theory

McMillan and Schumacher (2006) argue that employment of several data collection enhances the validity of the study. However the study must select one method that is central to the data collection and the rest should remain a supporting mechanism. Interviews and documents analysis are common techniques that are used together and this study adopts the in-depth interviews as the principal method while the document analysis discussed above is the secondary method to enhance validity of the study and credibility of the findings.

Validity in the qualitative research is the degree of congruence between the interpretations of the phenomenon, the reality of the social setting and the mutual understanding of meanings between the researcher and the participants. Validity addresses the issue interpretation, whether the researcher captures that which an interpretation or what is valid (McMillan & Schumacher, 2006).

In qualitative interpretive approach, validation is considered “a judgement of trustworthiness or goodness of the peace of research” (Creswell, 2003:205). The validation can be considered in two parts, i.e. ethical validation and substantive validation. Ethical validation focuses on the underlying moral assumptions including political interferences and issues of bias towards the certain social contexts. The substantive validation addresses the understanding of the topic, interpretation of facts as derived from different sources used. To ensure an acceptable level of validity, the researcher needs to take care in identifying assumptions and put justifiable arguments to an inference using collected evidence to support the assumptions.

3.11.2 Triangulation theory

Triangulation enhances the credibility of the study. Babbie and Mouton also states that “triangulation is generally considered to be one of the best ways to enhance validity and reliability in qualitative research” (2004:275). It is the best way to elicit divergent construction of reality through collecting information of the similar phenomenon in different points of view. Cohen, Manion and Morrison (2000), define triangulation as the use multi-methods of data collection in the study of some aspect of human behaviour. Denzin as referenced by Babbie and Mouton (2004) also goes further than defining triangulation as the use of multiple methods and state that it is a plan that raises the researcher above the social biases that can be influenced by using s single method of data collection. The above authors simply agree that combining the methods in the same study assist the researcher to overcome the deficiencies that flows from each individual method.

This study considered the two different methods of data collection. The official documents regarding e-government policy and official documents of selected departments are analysed. The main source of data collection is the in-depth interviews which were conducted with the selected sources above. There are no focus groups interviews conducted due to the nature of the study.

3.12 Data analysis

Data analysis is a process of bringing order, structure, logic and sense to the data collected. The process reduces data into a clear structure with interpretation so that the research problem could be solved. The conclusions are drawn from discussions and analysis of the themes that emanated in the analysis process.

Data analysis in a qualitative study is a systematic preparing and organizing of data reducing them into categories of meaningful patterns and themes (Creswell, 2007). This process is referred to as coding which “reduces data into meaningful segments and assigning name for such segments” (Creswell, 2007:148). The process can be done either manual or computer aided and the decision will be based on the sheer volume of data. This study has used both the manual and the computer aided methodology to process all the data collected.

Creswell (2007) encourages the qualitative researchers to look for code segments that are to be used to describe information and development of themes. The best methodology in identifying themes is to look for codes that represent information which a researcher expects to find before the study; codes that represents surprising information not expected and codes that represent information that is unusual and conceptually interesting.

The popular and manageable form of analysis involves identifying five to seven general themes. While it is difficult to reduce a large database down into five themes, the process of winnowing is best to use. It reduces data into small manageable sets of theme which make it easy in writing a report. The themes that emerged are also revealed as concepts that contribute either positively or negatively to the implementation of e-government policy in South African public service. This report has identified six themes and sub-themes as a way to classify the findings and constructive way to presents the findings.

CHAPTER 4 : EVIDENCE OF SUCCESSES AND FAILURES IN THE PERFORMANCE OF THE GITOS

4.1 Introduction

The data reporting is closely interwoven with the data analysis, however this chapter summarises and report on the data collected in both written documents and in-depth interviews. The data collected and specifically that which is reported intends to answer the main research question about the performance of the GITOs on the implementation of e-Government policy during the last decade.

Literature review in chapter two has provided fundamental theories on the performance of e-government initiatives, critical success factors and barriers that are faced by the CIOs, however this chapter presents the findings as evidence from the data collected based on the sub-questions. The evidence presented in this chapter was sought from the Department of Public service and administration, the chairperson of the GITO council, identified departmental GITOs, The SITA and the academic on public policy matters. Documentary analysis and semi-structured interviews were used as methods of data collection.

Policy and strategy documents from the Department of Public Administration were analysed in detail. This chapter reports on the salient points on e-government direction and implementation from the source documents and in-depth interviews from the all respondents identified above. The data reporting from the in-depth interviews will be a summary of what have been said by the interviewees. As indicated by Leedy and Ormrod “qualitative inquiry is fundamentally interpretive....a researcher engages in the active process of interpreting the data....noting some things as significant, noting but ignoring others as not significant and missing others that are potentially significant” (2001:150). This is considering the process of transcribing the data as the interviews were all recorded on tape in order to translate them to written text. The process of transcribing was also met with challenges of constructing some incomplete sentences from spoken words without misinterpretation or changing the intent of what was intended.

Subsequent to the policy framework of 2001 which is analysed in the previous chapters, the DPSA has developed a package of internal public service documents in 2005; i.e. the e-

government conceptual framework, the strategy, architectural framework and the implementation plan. For the purpose of this research report, the e-government strategy of 2005 is used as the latest direction providing document that aims to implement the e-government policy. The e-Government Strategy aims to locate all e-Government initiatives within departments and formulate an overall e-government programme as part of the five phases of e-government. It is in this sense that the strategy will be used as a benchmark, and the interviews will provide the real implementation on the ground. The strategy direction documents, independent analyst paper authored by the academic identified above and interview findings are reported based on the sub-questions of this study.

The presentation of qualitative data in this chapter is organised according to the following subheadings: e-government policy and strategic direction, performance of e-government initiatives and performance of the GITOs and GITOC in e-government.

4.2 Policy and strategy directions

Ngulube (2007) argues that the implementation of e-government is dependent on strong governmental commitment, clearly defined and coherent strategy, sound ICT infrastructure, connectivity, information literacy and e-literacy. Infodev (2002:5) stipulates that there is "no one size fits all strategy" however there are critical elements that needs to be put in place for the success of e-government. The strategy should focus on changing fundamentally how government works and how people view its government in service delivery.

The policy direction and strategy should build a citizen-centric model in which there is in-depth collaboration with citizenry or key stakeholders regarding the requirements that government should focus on. This is so because without the citizens input, "e-government projects are unlikely to succeed, because citizens will not use a system that does not respond to their needs" (Infodev, 2002:5). This dynamic change in focus from government-centric to citizen-centric approach is critical to the success of e-government transformation. It is the understanding that e-government is not only focusing on the automation of government's existing processes but it is engaged in creating new processes based on the citizen requirements to better serve its clients. South Africa followed suit with its e-government strategy in 2005 as a stepping stone to migrate to phase two (interaction) and phase three (transactional).

The vision of the South African e-government strategy is to offer citizens universal access to government information and services anytime, independent of any geographical and language constraints. This means e-government has taken a turn from government-centric approach to citizen-centric focus and orientation whereby "citizens are to spend time and effort on economic generating activities instead of engaging in time consuming, wasteful interaction with bureaucrats" (DPSA, 2005:8).

4.2.1 The critical success factors as laid out by the e-government strategy

The e-government strategy has reflected on some of the barriers to the current implementation of the policy and elevated some aspects to be done by department in order to succeed in the journey going forward. The aspects are identified as critical success factors in order to achieve the objectives. It clearly means that departments must ensure the following aspects are in place in order to implement the initiatives with success:

Buy in by senior executive of government is one of the critical success factors since they are accountable and responsible for all initiatives to enable service delivery. Coordination and monitoring of all related initiatives is to be centralised. Departments are to re-engineer their business processes and business practices to enable efficient and integrated services. To ensure the availability of resources required, departments are to engage in partnership with private sector and where feasible utilise the open source software. The provision of infrastructure for universal service will support digital inclusiveness. To maintain the efficient service, continuous development and retention of skills is the other critical success factor.

4.2.2 Expected performance: from strategy to implementation

The e-government strategy of 2005 stipulates the following critical focus areas to enable the successful implementation of the initiatives: development of e-governance and interoperability frameworks, IT architectures to enable integration, revision of the Minimum Information Security Standard to enhance security, establishment of e-government Acquisition Centre (ITAC) to streamline and coordinate the procurement of systems, clear approach to address the imbalance of lack of critical skills. Findings show that there are varying degrees of successes and failures in this stage. e-Government initiatives provides

government with new ways and alternative processes to govern and provision of cost effective and efficient ways of delivering services to its citizens.

4.2.3 Barriers identified in the strategy

It is expressed that the DPSA has been experiencing difficulty in gaining recognition as a mandated home for e-government. This has quite extensively complicated the setting up of an intergovernmental institutional framework for the implementation of e-government. The strategy however acknowledges few successful initiatives and several challenges encountered in the implementation of e-government.

The identified successes also happens in isolation within government departments and are not necessarily linked to an overall e-government strategy, i.e. the info.com 2025 project from Department of Communications and roll out of the Public Information Terminal (PIT) for citizens to obtain information on government services at Post Offices and other strategically located places and community centres throughout the country. The Department of Justice and Constitutional Development is automating all processes to ensure integrated storage of documents, dockets, court proceedings, records and related evidence. SARS e-filing and Home Affairs National Information System modernisation are also mentioned critical systems under development.

Challenges are specifically mentioned despite the significant efforts in the above achievements. The strategy has identified a lack of coherence leading to un-attainment of durable results as one of its focus areas. The fragmented delivery of projects throughout the three spheres of government, lack of dedicated budget allocation and no collaborative effort for integrated approach was also part of the challenges.

4.2.4 Findings and analysis from an independent analyst perspective.

The analysis of the policy direction and the strategy from an independent perspective by an academic was as follows: South Africa like other developing countries is still ranking low in e-government as compared to the developed countries. This state of affairs is caused by a number of political, social, economic and technological conditions that needs to exist in a country before e-government implementation. The following conditions have a direct impact on the success of e-government. Firstly the political insight and will of the decision makers

that e-government has become a necessity and not a luxury. Secondly, a cultural and individual acceptance of both citizens that ICT can enable government to serve the citizens better. Thirdly, a deliberate allocation of resources to develop both digital literacy and provision of reliable network infrastructure and access centres. Lastly, is a provision of a dedicated e-government programme which provides appropriate systems and content required by the citizens.

e-Readiness of departments and citizens found to be a current critical factor amongst many however; unlike others it does not require a short term plan. It takes longer period to establish e-readiness in a country where general literacy levels are low, basic necessities like housing, food, health services and jobs are not met. It is further difficult where basic electricity networks are absent, telecommunication networks and bandwidth penetration is low and no access to computer systems. The e-readiness approach tends to compete with the basic services for human survival and there is generally low motivation to divert scares funds to technology development. South Africa is faced with such scenario when developing their policies and strategies however the plans for e-government are still on the table. In a nutshell, the analyst view the policy to be noble however the strategy does not reflect the total realities that are faced by the South African government and just assumes that technology to be acquired by the departments will solve the service delivery challenges.

4.2.5 Findings from all the GITOs of small and large departments interviewed

Alignment and approval of the policy and strategies is critical according to the GITOs. Policy prescribes what to be achieved and put a weight behind the implementation. Policy ensures that an e-strategy is not a lot of ideas but a well thought roadmap of funded initiatives. The current structural arrangement of the GCIO and GITOC must work together to achieve the common goal. Change management is also a critical factor and especially in the education department whereby teachers need to learn to use ICTs as teaching aids. Changing the attitude and training the users is critical to success. Based on the above identified critical success factors in the strategy, the following are findings from the GITOs perspective on the ground.

4.2.5.1 Leadership and strategic direction

All the respondents agreed that e-government has less success since the start of the phase two and three. The initial strategy only served the good purpose for the phase one and did not cater for other phases. The main cause of failure is identified as lack of effective leadership to give strategic direction. Phase two required every department to initiate the transactional systems for serving the citizens. "Instead of enabling government services the way it was envisaged in phase two, the DPSA decided to centralise and consolidate all the services and initiatives". It was also viewed as if DPSA wanting to manage the systems that they do not have authority over the business rules.

It is also agreed that while there was bad leadership in DPSA, GITOs should have shown leadership and initiate the mechanism to drive phase two onwards. Failure by the GITOs to strategically participate in the planning and ensuring that phase two takes place was a proof that buy-in by the executives is a key success factor in implementing any e-government initiatives. The respondents have also identified the lack of by-in by accounting officers since they have not call for any funding of many initiatives that are identified in the e-government strategy of 2005. According to one respondent, heads of departments focus on various priorities and do not regard the e-government as a strategic vehicle to serve the citizens better.

For some initiatives that were identified by the e-government strategy, funding was also not availed by the National Treasury. As argued by the independent analyst, most e-government initiatives ranked lower than the other critical priorities of government like social grants, health, crime combating and others. e-government projects were not packaged in a way that enables and support the priorities of government; hence less or no funding was available in other instances.

4.2.5.2 Mapping out of business process and architectures

The other failure was identified by respondents as the lack of mapping out of business process of government. Re-engineering the business processes was identified by both the InfoDev (2002), Ngulube (2007) and the e-government strategy as a critical milestone to ensure that services are integrated. Heeks (2003) has also identified it as a critical factor that

enables agencies to modernise the legacy systems to ensure the interface with online transactional systems. The respondents have agreed that the development of the Government Wide Enterprise Architecture (GWEA) was an attempt to standardise on the methodology to be used by all government departments in developing their data, applications and infrastructure architectures. This was an attempt to get all the departments to map all their business process to enable integration of systems and a enabling the single window to service delivery. It was confirmed that this framework is still un-approved and therefore implementation is a matter of the future.

4.2.5.3 Critical ICT skills

All respondents except for one, agreed that the lack of critical ICT skills in government has led the departments is a cause of failure in many initiatives. Many government departments have experienced the ICT skills shortages, and are permanently depended on consultants which are no longer affordable. The one respondent stated that skills can be acquired anywhere in the industry if government knows what it wants. However the others agree that the exodus of skills from SITA to the ICT industry was also noted as the cause of failures and non-performance of the agency and has indirectly influenced failure of some e-government initiatives. The strategy on the other hand calls for departments to continuously develop and retain critical skills while the public service does not classify such professionals as scarce skill hence they do not qualify for special salary dispensation.

4.3 Performance of e-government initiatives

4.3.1 Measurement Instruments

e-Government performance is measured internationally through recognised instruments like the e-readiness country roadmap, the ITU and UN e-government rankings. Several of those ranking constitute aspects that can be regarded as good practices on e-governance. South Africa is amongst the countries that use the above measurement tools and their performance has lately regressed. For the past decade, South Africa did not have an internally developed mechanism or tool to do measurement of its performance; however in 2011 the Department of Communication has made its first attempt and developed a self-measure called the e-barometer. The toolset is a good attempt with fewer short-comings however once refined, it will become a good measure for e-government performance within SA.

Frank Bannister model and Heeks models can be combined to provide a good model of e-government performance. Frank Banister's model reckons that success in e-government initiatives requires a combination of a political champion, financial administrative champion and IT champion in the organisation. There is some sound consensus that the model is a top down approach which does not guarantee sustainability of any initiative. It is however a good approach to be adopted in kick-starting any initiatives. "I would add in his model the bottom up approach of a culture of support for such attempts and initiatives". Findings of failure in e-government initiatives in this report points out the lack of banister's model. Heeks's model complements the above but focussing on all the success factors from the bottom up approach as discussed in the literature review chapter.

4.3.2 The extent of failure in e-government implementation

All respondents have agreed that the establishment of the SA government gateway portal was a success in the phase one of the e-government programme. Failures are specifically registered in different ways by the respondents. Some refers it as stagnation on e-government in phase two of providing the transactional services, others interpret it as the late start due to un-readiness of the back end processes and systems while a few outside government calls it pure failure due to lack of leadership and skills.

Government has not come out to acknowledge the total failure in this programme through the 2005 strategy, however agrees that the progress has been extremely slow and online transactional services have only happened in very few pockets of government. It is an uneven situation currently, whereby other government departments have started to pick up on the second phase whilst others have stagnated. Furthermore, it was emphasised that nothing has been done to enhance what has been achieved some few years ago in the first phase. "There is still up to now no improvement of the static phase of websites and portals and that leads to the even more stagnation in e-Government". The abandonment was registered in both the policy developers and the implementers. Policy developers confirmed that they did not establish the monitoring and evaluation which has now lead to the current uneven implementation. The implementers also agreed that they did not establish a forum to give any feedback as to what are the contributing factors towards both their successes and barriers.

It is also found that government departments were not on the same maturity levels in terms of e-readiness when the policy and the strategy were initiated. The initial policy ignored the fact that most of the government business processes were not been documented, and that direct automation may have led to disasters. The element of automation is thought of separately from the element of business processes that underlie it. e-Government project requires some form of business re-engineering which in turn requires a lot more time that allocated.

Another factor agreed upon by respondents is that there were no documented lessons learnt from phase one to enable the preparation to the next phase. Without the diagnostic assessment of the problems encountered, most of phase two project have failed and instil fear even to other departments to start up, hence the perceived stagnation. The external attributes to the failure that can be registered as the incompetency of the State Information Technology Agency (SITA), which lacked the substantial drive to ensure that the modernisation projects happen.

It was also noted by few respondents that policy development was done without any engagement with the citizen. The policy development office also acknowledged this serious shortcoming. “We also find ourselves doing it over and over again”. The reason behind this shortcoming was reported as “Policy writers consider themselves experts and claim to have the knowledge of what the citizens’ wants”. This leads to misalignment and it was evident in this case whereby the 2005 strategy excluded the use of mobile technology to access government services and information. Currently cellular phone penetration has changed the landscape in which government could render services to the citizens.

4.3.3 General performance by large departments

4.3.3.1 Ownership of initiatives

Large departments have agreed that performance of e-government initiatives was poor. They further stipulate that e-government initiatives are not solely ICT initiatives and that the owner shall remain the business owner. The business owner remains the project leader while the GITO enables the systems and infrastructure. The programme is championed by the business owner (executives) while the technology output is the responsibility of the GITO. It is in this sense that a GITO of a successful department stated that “It is not my responsibility to make sure that the revenue that is collected has

increased, it is however my responsibility to make sure that the platform that is used is user friendly and stable". This concurs with the fact indicated above by Heeks that executive buy-in is a critical success factor of the e-government project.

It was also used as an example that the entire executive of Home Affairs department understand what e-government is all about and have a total buy-in in the strategy. The respondents agreed that the challenge occurs in the actual implementation since the various stakeholders in the project are outside the control of the receiving department. They also agreed that once a department registers a failure including the implementation of e-government projects, that these failures are engraved in people's minds and in return reduce citizens' confidence in the concept of e-government. The case of public knowledge on the failures of Home Affairs e-government projects was stated as an example.

4.3.3.2 Overall causes of failures

The causes of failures were categorised as internal and external factors. The internal factors identified include the complications in modernisation projects, ranging from lack of leadership to bad systems architectural design. In other service delivery departments, e-government was never used to drive their objectives. "We have started our own initiatives with separate policies and strategies to deliver services to our target group". While there is a perception to the public that the department of education will lead in the e-government initiative, they regard the e-government as a support tool to their educators and is to be adopted in a limited way.

As usual, there were several external factors to the causes of failure in the programme. Failures points to the policy, delays in the rollout of infrastructure and the non-performance of SITA in their acquiring mandate. The delays by both the DPSA and SITA in rolling out the infrastructure in rural areas of the country are identified by many respondents as barriers. "Connectivity is still the main issue in new offices that are opened by departments like Home Affairs so that services can reach all citizens. The mandate was given to DPSA to play a coordination role and make sure that the underserviced areas have ICT infrastructure and ensure that all the Thusong Centres are established and run throughout the country". It was also reported that this matter has been escalated to the leadership of the DPSA. The latest

alternative by departments is to sign new contract with Sentech for connectivity in the mean time for connectivity to new offices in deep rural areas.

Contradictory finding comes from the department of basic education where e-government implementation varied with the rest of other findings. The department has certainly responded successfully to phase one of e-government implementation has still uses its website as a platform to provide information to both educators and learners. However the provision of information through the basic education websites is not within the intention of e-government services but rather a support services to all the educators and learners. There is a slight difference in their belief system whereby e-government is for "departments that serve every citizen and not a segmented clientele.

Their argument is that the e-learning and e-education strategy were in place before the e-government strategy of 2005. The e-Government strategy development never took cognisance of the e-learning strategy. The strategy intends to enable educators with online teaching aids and support learners. The e-learning initiative is not a service but a support to the teachers and learners and therefore is not part of the e-government strategy that focus on online service delivery to the citizens. The service that the department can classify as e-government is "online request and issuing of qualifications certificates". It was repeatedly asserted that education department was not one of the selected departments for those e-government initiatives. Therefore the department has less participation in all e-government programmes.

4.3.4 Performance of smaller departments

The general performance in small departments is critically low compared to that of other bigger departments. They confirmed to experience similar challenges that are faced by the bigger departments. These smaller departments feel the same impact since they serve diverse clients while department like Arts and Culture claim to be bringing a reasonable portion of the country's GDP in terms of tourism. Departments of agriculture, energy and mineral resources are also categorised as small, however they regulate industries that constitutes the majority of the South African's GDP. It is however critical for those departments to be able to serve the clientele in a cost effective and efficient way through electronic service delivery.

It is agreed that smaller departments have successfully implemented the first phase of the e-government. The department that was interviewed has not yet started with the implementation of the phase two. It however has several plans for the second phase in the heritage and library units. The department listed several projects that are in process as depicted in their strategic planning documents, e.g. The National Archives is to ensure that non-classified information is available online, and the labour intensiveness is upon the digitisation of all the information. The specific findings regarding barriers to implementation of e-government initiatives are summarised as follows;

4.3.4.1 Modernisation of legacy systems

The current findings within the smaller departments are that they still use the legacy mainframe systems. The arts and culture for example is still using the bibliographic system that was developed in 1973 and intends to replace it with the modern interactive system. It was also found that some departments still run their legacy system parallel to the modernised system and has to do double capturing of data. The department of basic education still fall back into the legacy examination system during December since it was design to handle the computing of large sums of data. These mainframe systems have several shortcomings and at the moment they are a subject of many parliamentary questions within departments. To this date it is confirmed that modernisation of legacy systems is a critical point for all government departments.

4.3.4.2 Change in policy directions and merging of government departments

The smaller departments are several times threatened by political and administration changes. As administration changes, it has become a tendency to merge or disintegrate certain departments and also change their roles and functions. This was found to be one of the critical factors in inhibiting the progress of e-government projects. Changes in political leadership also brings some level on instability within the administration, a good example was at the department of arts and culture where the great initiative of a heritage portal to serve the sector was cancelled due to administration change. The concept of an interactive portal had already been welcome by the clients, e.g. “if you needed any artist who specialises in Jazz music, therefore you could log on and view all the music players in the Jazz industry. This concept was affected by the change of leadership and policy direction and currently all the clients have now resorted on twitter to discuss any matters of arts and culture”. It is clear

that the clients need a collaborative forum where they can engage the department on matters of arts and culture and the change in policy direction have led yet to another failed project.

4.3.4.3 Effective leadership to give strategic direction

The smaller department agree that the initial strategy only served the good purpose for the phase one and had not catered for other phases. Lack of leadership drive was pointed out as one of the factors. Phase two required every department to initiate the transactional systems and "instead of enabling government services the way it was envisaged in phase two, the DPSA decided to centralise and consolidate all the services and initiatives" This was a cause of concern to departments since the DPSA wanted to centralise both policy direction and implementation, a flout to good governance.

Lack of funding for some of the initiatives was also indicated as a barrier to implementation. They could not dig down their coffers to implement all policies like larger departments which can just change priorities and to reallocate funds for e-government priorities. The lack of leadership is seen through the fact that the accounting officers have not yet engaged National Treasury on e-government initiatives to motivate for increase in their budgets. Heads of departments just focus on various priorities and do not regard e-government as a strategic vehicle to serve the citizens better.

4.3.4.4 Funding for e-government initiatives by National Treasury

The e-government initiatives are ranked lower than the other critical priorities of government like social grants, housing, health, crime combating and others. In a country where basic conditions of living are barely met, no motivation can place the e-government initiatives on the same level. e-Government projects in many instances are not packaged in a way that enables and support the priorities of government; hence less or no funding is allocated for the initiatives. Non-integration and lack of a single strategic voice on matters of e-government contributes to the weakness of the individual department's motivations for funds allocation.

4.3.4.5 Lack of mapping out of business process

The department acknowledges the development of a Government Wide Enterprise Architecture (GWEA) as an attempt to standardise on the methodology to be used by all

government departments in developing their data, applications and infrastructure architectures. It is however introduced at a later stage whereby many other departments have engaged in different methodologies and have mapped out their business processes. This contributes to the incompatibility and challenges for the interoperability of systems between departments.

4.3.4.6 Political interference

The meddling into the processes of acquiring the e-government solution tenders by senior administrators has posed interferences and challenges. This was evident within government departments and SITA and has resulted in allegations of corruption and flouting the principles of good governance.

4.3.4.7 Critical ICT skills

It was also expressed that the lack of critical ICT skills within departments has led to permanent dependency to consultants and which came with a high price tag for government. The exodus of skills from SITA to industry also elevated the non-performance of the agency and has indirectly influenced failure of some e-government initiatives within the smaller departments. It was also found that SITA has neglected the smaller departments to strive within the midst of all failures in order to serve the larger departments better.

4.4 The e-Government implementation

There was a consensus that the performance of the GITO is a contributing factor on the failure of e-government projects. However, respondents stressed the fact that the ability of the GITO to direct e-government initiatives is largely dependent on where they are located structurally in the organisation. The second factor is their ability to engage at the strategic level. Where ICT is viewed as a strategic enabler of the organisation, it is indicated by ensuring that the CIO or GITO becomes an integral part of the executive. There was a consensus amongst respondents that ICT brings about efficiency in departments, hence the location of the ICT function should be considered at a strategic level. The findings on the performance of the GITOs varied from one department to the other, and has pointed in many different aspects.

4.4.1 Performance at strategic level

The performance of the GITO within their respective departments can not only be determined by the successful implementation of e-government. There was a consensus that GITOs are crucial officers in government departments; however they are not optimally used for integration of IT systems from a strategic perspective. “My impression is that the GITOs have been involved so much into operational issues”. Many GITOs are not involved sufficiently in strategic management planning matters but relegated to solve technical glitches and maintenance of government legacy systems. In some smaller departments, the executives do engage industry directly and acquire systems. The GITO is thereafter required to support the systems that might not be compatible to the rest in the department.

One opposite perspective that came out of the interviews is a lack of understanding and knowledge by top management layer of the benefits derived from ICT in service delivery. The unwillingness to place CIOs in strategic positions as prescribed by the Cabinet Memorandum results in voiceless GITO who cannot therefore put emphasis on the strategic importance of e-government programme. “The reason CIO thinks like technocrats is that they are not located at a strategic level and made to think like enablers of business”. The other respondent also stressed that “GITOs are made to catch-up; things do not start with them but they are always required to react”. There is an agreement that implementation of e-government should be driven from the executive where strategic matters of departments are discussed. ICT is also to be viewed as a key driver in the delivery of many services and therefore a need to be driven at a strategic level.

As indicated above, it is also believed that GITOs are promoted to this function from an IT technical support function and therefore require full strategic management support from the DGs. They also need strategic thinking training, instilled confidence that they can initiate the modernisation of government services through ICT. The current GITOs are therefore faced with a challenge to change their thinking and technical language to be business oriented. It was emphasised by many respondents that GITOs needs to acquire the ability to translate technical language to business language.

The same GITO is to have the appropriate skill and ability to translate the business requirements to ICT requirements. The current finding is that many GITOs are not leading

from the front, but just manage the de facto ICT operations. They have not proven to be wise buyers and that has been exacerbated by the procurement regulations through SITA. The skilled CIO cannot be attracted to the government departments due to the level of remuneration of the current GITO function.

4.4.2 Performance at operational level

GITOs are seen as the entities that have failed government departments in uplifting the e-readiness maturity levels. The GITOs could have taken advantage of Open Source Software and speed up the delivery of services through affordable technology channels. It is the same entity that should have led the business process engineering in the respective departments to ensure interoperability of systems. Although the GITO Council has initiated certain directives like implementation of Open Document Format as a standard for all government departments, little compliance has been registered in this regard.

It was also indicated that while the GITOs registered the fact that there was bad leadership in DPSA, they themselves have folded arms and watch the e-government programme failing. “GITOs are equally to be blamed since phase two was planned for them to be in charge. GITOs did not hold the bull by its horn and take charge of their departmental initiatives”.

Finally it was agreed that there is continued silo mentality between the GITOs and their current ICT initiatives. Each department still plans its e-government initiative in Silo and hence there is no integration of systems and e-services in government. Central coordination and a single strategy that identifies and streamlines projects is essential. A good model of decentralising the implementation of projects needs to be investigated with participation of the GITOs.

4.5. Performance of the GITO Council (GITOC)

The GITO Council is a collective body of GITOs that serves as an advisory body to the Minister of Public Service and Administration through the office of the GCIO. It is a think tank on government ICT matters and directs and asserts the tone on ICT matters in government departments. There is an overall agreement that the GITO Council is not performing well due to various factors. The findings are divided into two separate sections,

the findings from the GITO Council members and the findings from the non-members of the council.

4.5.1 Findings from the GITOC members

It is agreed by the GITOC members that the council has the right focus, and that there are few elements that must be clarified for excellent performance. One responded asserts that the Council has matured significantly in the past decade. The Council has also achieved some significant milestones e.g. developed a Government wide enterprise architecture framework, established the annual GovTech conference, developed a policy of the use of Free and Open Software and many other initiatives. The elements that have been commonly identified and agreed upon as barriers to excellent performance are described below.

4.5.1.1 Unclear mandates

The institutional arrangement whereby the GITOC, OGCIO and SITA had to overlap in their mandate has created more turf battles and wars than its intention. It was also agreed that the three entities has never been aligned in thoughts and deeds. The three entities play a critical role in the implementation of the e-government programmes and therefore glitches are to be identified. GITOs argue that there is a need for clarification of mandates and boundaries. The alternative agreement that was reached by the council was to make the GCIO a chairperson of the Council. The recommendation is based on the fact that the GCIO will direct and align the activities of GITOC, utilise the advice provided for by the council and ensure that the recommendations are approved by the Minister of Public Administration for implementation.

4.5.1.2 Weak commitment by GITOs

It is also agreed that the GITOC has become a voluntary body while the founding document indicates the opposite. It is only few GITOs who attend the council meetings and participate in the activities. This has rendered the council questionable and undermined of its authority to be a think tank and a credible advisory body to DPSA on ICT matters. It was also agreed that the council never led from the front specifically on the matter of e-government programme. “GITOC should stop being the spectators and act as the thought leader and authority in IT in government”. GITOC should be able to stipulate how government business could be enabled, irrespective of politicians buy-in. “If the politicians have an issue with what we are doing

they certainly have an authority to stop us". However, it was agreed that the GITOC has not implemented anything in unisome. Projects are left to departments to carry out implementation without monitoring.

4.5.1.3 Non-Alignment with other decision making bodies of government

The other matter discovered is the non-alignment of the GITOC with decision processes of government, e.g. the clusters. It was identified that GITOC remains some lonely voice without the Information Society and Development (ISAD) cluster. The work of the council is currently not integrated into any cluster system. The cluster system packages programmes for the Forum of the South African Director Generals (FOSAD) and then reaches the highest decision body. "At the moment GITOC is shouting in vain". GITOC could still participate within any cluster system; however GITOs recommends the Governance and Administration cluster under the representation by the GCIO.

4.5.1.4 Weak leadership

Leadership challenges have been identified in the GITOC. It was also agreed by one GITOC member that the council "lacked teeth" and has no resources to do its works and solely depends on the OGCIO. This has marked tremendous underperformance and at most dependent on donors to be able to do certain tasks. Another alarming discovery was that GITOC has not effectively achieved many of its objectives including the responsibilities of sharing best practices and experiences; hence there are few pockets of excellence and major areas of failures in various departments of the same government.

4.5.2. Findings from the external parties to the GITO Council

4.5.2.1 Clear allocation of mandate

The common finding is that there is a view that there is no clear allocated leadership and mandate of ICT in government. The South African government has decentralised the management of ICT to various departments, DPSA, Department of Communications, department of Science and Technology and security mandates are shared between State Security Agency and DPSA. "There is suddenly four or five beaurocratic agencies dealing with ICT matters riddled with conflicts of mandates. Issues of e-government in particular have no clear coordination, leadership and clear division of mandates. Huge beaurocratic

powers cannot be put together to share the mandate". The call for an ICT Ministry was indicated by one respondent as a solution to many of the above mentioned challenges.

Secondly, the institutional arrangements that are currently in place (SITA, DPSA and GITOC) are not performing as per the legal framework that established them. SITA as a procurement agency for government was mismanaged over for a period of time, changed CEO almost each year which hampered strategic thinking and continuity. It was also riddled with lots of allegations of corruption, nepotism and incompetency. "SITA has spent enormous amount of time in its internal restructuring that has squandered a lot of time and resources rather than focussing on strategic policy issues of enabling government service delivery through ICT".

While the GITOs recommend that there should be clarification of roles between the Council, GCIO and SITA, the external analysts argues the opposite. They call for fruitful discussions in the GITOC and the focus should be shifted to the right objectives other than the "never ending clarification of roles between themselves and GCIO". They argue that there is a need to come up with a strategy to renew and modernise the aging and legacy systems of government with integrated and cost effective ones as a primary focus for GITOC.

Thirdly GITOC on the other GITOC "has no teeth" and is not legally empowered to do what it intends to do. It was indicates that GITOC fail because it does not have resources to undertake their basic activities; operates on a draft constitution and failed to recommend several required policy frameworks, standards and strategies to the relevant authorities. "I know that the Chair of GITOC has been fighting year after year to get the resources to do the work, but he has not received any budget and resources. GITOC can do many things using the available resources and through electronic communications but much of the work including at the development of strategies and standards requires full time resources available for GITOC". A recommendation was that GITOC should be modified to become a body that has an ability to execute.

The fourth finding identified by one respondent referred to the "on-going turf battles between the GITOC, SITA and the Government CIO that has created a paralysis in the ICT direction and several initiatives including e-government". Another respondent has labelled GITOC as "the bitter council" which always mourning about either SITA or the GCIO.

4.5.2.2 Capacitating the GITO Council

The council has no capacity and budget to enable its effectiveness. The Council relies on the GCIO office which provides only the secretariat functions and meeting accommodation. In the absence of the effective GCIO, the council have assumed many functions including the development of policy frameworks, strategies and standards. Without the resources to execute these functions, the Council had to rely on donor funding to undertake some of the most critical government assignment. There is however some disagreement between respondents on the matter of capacitating the council to execute. One respondent thought that "if the GITOC is a think tank and a highest decision body on ICT for government, therefore it should be provided with support structures to be able to do the council work". The other respondent argues that the GITOC is only an advisory body to the GCIO and Minister and should not be allowed to take over the GCIO mandate of developing policies, framework and standards. There is a however a consensus that GCIO plays a pivotal role in the Council and reducing the tension between the parties will enable the focus into single strategic goal of effective management of ICT in government.

CHAPTER 5 : SIX FACTORS AFFECTING THE PERFORMANCE OF THE GITOS

5.1 Introduction

Data analysis process adopted brought order, structure, logic and sense to the data collected. The process of coding data manually and computer aided reduced data into a clear structure that enabled interpretation to solve the research problem. The conclusions that are drawn from discussions and analysis have aided the formulation of GITOs performance and policy recommendations.

This chapter focuses on interpreting and analysing the data collected in thematic form. As described by Guba and Lincoln (1994) interpretation is based on hunches, insights and intuition. Interpretation in this report is based within social science construct with a combination of personal views. In this process, the researcher has stepped back to form broader meaning of the situation. The interpretations in this report are presented both in a tentative way, sometimes inconclusive and questioning format.

The following themes have been identified in the analysis of the performance of the GITO in the implementation of e-government policy: regulatory framework, leadership, structural arrangements, digital divide (infrastructure and access), integration of services and systems and lastly performance. These themes were both identified manually through a coding system and also by the Leximancer 4 system where the unsupervised textual analysis was conducted. The Policy Framework and ICT strategy were coded separately through the unsupervised textual analysis. The consolidation of all sub-themes was done to end up with the identified themes above.

5.2 Theme 1: ICT governance framework

Government administrations are beaurocratic in nature and the top down approach applies in all aspects, therefore the strategic direction in a form of policies, directives, strategies and such documents is required. When e-Government was adopted in South Africa, it was also announced through a policy framework of 2001. There was however no legislation passed thereafter to strengthen such policy objective. Lack of legislation is considered a weakness since the acts and regulations are regarded as legal instruments or instruction from the executive level of government to departments and all sectors of society. They clarifies “what”

to be achieved, lays down structural arrangements, allocate responsibilities and accountability. Penalties to non-compliance are also clearly spelt out.

5.2.1 Policy as an indication of political will

All the respondents confirmed that the development of the policy framework in 2001 is a proof that South Africa is an early adopter of e-government approach. This earlier move had also put the country in an advantageous position globally, specifically amongst the developing countries. The 2001 has influenced the big bang approach of phase one as agreed upon by many respondents. All government departments were coordinated, had a common framework of information that had to be made available on the web. The portals had a common face and were coordinated. The gateway portal was also created and managed by the Government Communications and Information Services department.

It is concluded that the absence of a legal prescript such as an act and regulations to manage public policy is a critical weakness and has impacted the e-government initiatives. The legislation could have clarified the roles and responsibilities and solve the tensions and conflicts around mandates that has been reported by majority of the respondents. The tensions between GCIO, GITOC and SITA are mainly around clarity of mandate and incompetence game blame. The time and effort wasted in internal clarification of mandates and tensions was a sheer lack of strategic direction, which became the main factor of failure in implementing the policy.

5.2.2 Weak policy bad implementation

As identified in the literature review, the e-government policy is weak as analysed by Abrahams, (2009). A policy is a direction giving instrument, once it is not precise; it leads implementers to various directions. The e-government policy has left implementers to speculate what to be done and the results were different interpretations. Although the objective of the policy was spot on “improved service delivery” it identified its focus areas as deriving value from the IT. This is also emphasised by report of data summary in chapter four. Departments have stagnated and several of their uncoordinated projects remains focussed on the departmental value while the citizen was not central to all the initiatives. The policy development was done without any engagement with the citizen. One respondent confirmed that “It is common weakness that policy writers considers themselves experts and

claim to have knowledge of the citizens needs". The focus areas in the policy were not necessarily wrong; however they received more emphasis than the specifications for improved service delivery.

The policy also lacked the identification of aspects of building an information society. Although information society was also identified as an enabling factor of successful e-government, the policy lacked the emphasis and further guidelines. Failure in e-education and e-learning projects as reported was an indication of uncoordinated vision, lack of understanding by government executives on the importance of achieving an information society.

5.2.3 A call for policy revision

There is a consensus for policy revision. There are two schools of thoughts and subtle tension between the policy developers and the GITOs who are implementers around centralising both policy development and implementation. Currently the policy development is a function of DPSA (OGCIO) and the implementation is decentralised to government departments (GITOs). The DPSA blames the lack of coordination to the model adopted as it disables them effective control over implementation. The DPSA claims that "the prioritised e-government projects within departments are not in line with the policy proposal". DPSA hence calls for a paradigm shift of central policy development and central funding of e-government initiatives.

On the other hand, the GITOC asserts that the centralisation of policy development and implementation has many disadvantages. Firstly they argue that the initial attempt has led to many failures since the "DPSA wanted to manage the systems that they do not have authority over the business rules". Secondly, GITOC also argued the flouting of good governance, "when policy developers becomes implementers, then arises the conflict of interests". This is a matter to be clarified in the revision of the e-government policy.

Majority of respondents have agreed that ten years is a long period for an ICT policy implementation without any revision taking into consideration the fast evolution and changes to technology trends. Mobility has changed the landscape globally and in South Africa particularly the cell phone penetration warrants the policy change towards access of online government services through mobile technology. SITA strategy is also calling for the multi-

channel access approach due to digital divide and promotion of choice to medium of communication with government by the citizens.

Monitoring and evaluation is critical in policy development theory and is considered part of the feedback loop. It identifies and measures the implementation of the policy, where there are unforeseen and unintended consequences; remedial steps are immediately taken through revision. This important aspect was totally excluded in the current policy development process and it is therefore recommended for inclusion by all respondents. A call to introduce the monitoring and evaluation unit will enable a realistic and target orientated policy. The unit must evaluate and input on the realistic maturity level of different departments in all three spheres of government and the e-readiness of the country. Monitoring and evaluation must also do a diagnostic assessments of all challenges encountered and documents the lessons learnt for preparation to the next phase.

5.3 Theme 2: Leadership

Literature review has identified that African countries requires appropriate leadership in the public sector to enable public and private participation in e-government initiatives. The lack thereof affects the total delivery of e-services and is seen by the lack of coordinated and coherent strategy. Majority of respondents called for strong leadership in Public Service however did not express themselves about the importance of Public Private Partnership for effective delivery.

5.3.1 Executive buy-in as a factor of success

SARS has been reflected as a pocket of excellence at this point in time, and one of the critical success factor identified was the executive by-in and leadership in the e-filling initiative. E-Filing was conceived out of business conversation, the head of the department took ownership of the initiatives and lead from the front. “Although the organisational leadership had less technical expertise and understanding of ICT, they believed that ICT will enable efficiency of revenue collection”. The executive of SARS as business owners had a common vision that e-government starts with the desired business impact articulated and directed from the executive while the technology beat is something that comes way later to enable the processes. This has been identified as one of the secrets of success in the e-filling initiative.

Various projects and initiatives that have failed were also due to lack of leadership both by the executives and managers in departments and agencies. In Home Affairs, “complication in the modernisation projects ranged from lack of leadership to bad systems architectural design”. Failure of this project, has affected several other departments in rolling out their e-services. Home Affairs is the custodian of citizen information and it is critical that the single view of a citizen is created through modernisation of the current population register. The system is interfaced by various institutions including banks to verify the identity of their clients. In order to integrate the online services as planned in phase three, a single view of the citizen is critical. Success of e-government projects is dependent on the strong leadership of the heads of the departments and their executives.

5.3.2 Absence of strategy means no roadmap

Where there is absence of strategy, every change in administration could mean a change in policy direction. A strategy articulates the policy vision, packages the focus areas, lay down the processes to achieve objectives with timelines. The absence of a strategy opens the flood gates of disasters and makes it difficult for measuring of performance. It was confirmed that the e-Government strategy of 2005 remained a draft, although some recognised it as a legitimate direction giving document. When there is no clear direction through approved strategy, every change in leadership in departments could lead to change in direction; this has affected several departments where initiatives are abandoned before completion. A good example is the cultural observatory initiative as a key to ensure e-government at Arts and Culture department which was abandoned for a new “Msanzi’s Golden Economy” strategy. This has left the clients of the department with no collaborative forum, and have now resorted to twitter to engage on matters of Arts and Culture.

A Strategy also ensures a single vision to different implementers. Smaller departments could not implement the same way under the similar timelines with large departments. In the current situation where policy and strategy are centralised while implementation is decentralised, effective leadership is required to give proper strategic direction to all three spheres of government. Implementation of phase two picked up challenges when the DPSA failed to issue strategic direction. This was attributed to several reasons including the lack of effective leadership in the GCIO office and unsuitability of the GCIO office in DPSA.

Leadership failures are also visible within departmental GITOs and SITA. GITOC never lead form the front, regarded a “toothless dog” and have “folded arms” when the DPSA clearly indicated lack of effective leadership. SITA was also riddled with inefficiencies, corruption and failed to deliver on its core mandate as prescribes by the SITA Act and forever developing a turnaround strategy.

5.4 Theme 3: Organisational structural arrangements

An independent analyst argued that the South African government has decentralised the management of ICT in various departments. “There is suddenly four or five beaurocratic agencies dealing with ICT matters riddled with conflicts of mandates. Issues of e-government in particular have no clear coordination, leadership and clear division of functions”. The lack thereof shows that there is no clear allocated leadership of e-government initiatives. He calls for the establishment of a single Ministry of ICT or a review by the Presidential Review Commission to initiate the new recommendations.

5.4.1 Different ICT mandates in different departments

ICT policy and direction in the public sector is the responsibility of the Ministry of Public Service and Administration. The mandate is clear and does not conflict with any other Ministry. The Department of Communications (DOC) regulates the ICT Sector. The two departments have to work hand in hand since the effects of DOC regulations to the sector influences and affect the performance of SITA and subsequently the GITOs. To date there is no conflicts in mandates between the departments but the unintended consequence of regulations by one Ministry to the other can be remedied by ensuring that the left hand knows what the right hand is doing. The creation of the cluster system in government was intended to resolve such matters. A call for a single ICT Ministry can however strengthen direction and coordinated management of ICTs in the public sector.

It is agreed that ICT policy and strategic direction through the GCIO was recommended as a function to be placed at the Presidency by the PRC. However the PRC recommendations were not implemented in full and as a result the function was placed at the DPSA. The Presidency is still viewed as having powerful influence towards all government departments. “DPSA was successful in driving Human Resources policies, but failed to drive the ICT policies” hence a call for the review by at least two of the respondents. It is also clear that the

DPSA failed to coordinate the e-government strategy and monitoring thereof. It is however a speculation to assume that placing the GCIO office in the Presidency will yield better results.

5.4.2 The DPSA, GITOC and SITA management arrangement

The cabinet memorandum 8 of 2000 is the directive document that created the functions of the GITOs, the GITOC and the GCIO in an attempt to bridge the ICT requirements gap between departments and the SITA. Although the memorandum clearly stipulates different functions for each entity, the lines are blurry and have resulted in the ongoing turf battles between the GITOC, Government CIO and the SITA. Many respondents attest to the tensions between the three entities and that they have created paralysis to the ICT direction and have affected many initiatives including e-government. Each GCIO has had a bad relationship with the GITOC to an extent that one respondent refers GITOC as a “bitter council”.

The mandate of the GITOC and GCIO is clear; however it is not a workable solution. The Council advices the Minister of DPSA and does not necessarily work through the GCIO structures while the GCIO is the policy entity of the Minister of DPSA. In several cases the previous Minister of DPSA has given the mandate to the GCIO to coordinate the work of the council irrespective of the chairperson of the GITOC which was clearly not welcome by the members of the Council. The mandate is to be reviewed and clarified through the Public Service Regulations that are in current review process.

The lack of this clarity has caused severe damage in the e-government programme over a period of time. Presently the GITOC has taken over most of the responsibilities of GCIO such as developing policy frameworks and standards and recommends these to the Minister while overlooking the GCIO. The office of the GCIO to date of compilation of this report remains headless and is on the silent mode. The OGCIO should be able to formulate the policy for ICT direction, coordinate the strategies, and develop frameworks and standards with the advice from GITOC. The GCIO has to take its strategic position and drive ICT in government from the cluster perspective, with a supporting structure like the GITOC. The current structural arrangement of the GCIO and GITOC must work together to achieve the common goal. A call for the GCIO to be the chair of GITOC has been recommended by all respondents as an immediate solution to the turf battles.

The mandate of SITA is clear and legislated; however the GCIO has a responsibility of monitoring SITA. Without appropriate structures and non-clarification of the monitoring role the function remains at a superficial level for the GCIO. The attempt by GCIO to monitor performance and alignment to the Minister's policy directives has left tensions between the two entities. It is however argued by the analyst that "the institutional arrangements that are currently in place between SITA, DPSA and GITOC are sufficient but all the entities are not performing as per the legal framework". He further argues that in the last decade, the sorting out of this mandate challenge and restructuring of SITA dominated the agendas of their meetings while the e-government initiatives suffered.

5.4.3 The location of a GITO function within departments

The cabinet memorandum has stipulated the location of a GITO in a department structure and the levels of remuneration. All GITOs are to report to the head of the Department, and to be remunerated at the level of a Chief Director in a large department or a Director level in a smaller department. The categorisation of whether the department is large or small was left to the departments to determine. While many GITOs are placed at correct levels of remuneration, majority still do not report to the head of the department. It therefore means that majority are still regarded as a support function or "LAN and desktop managers" while they are supposed to be strategic enablers of departments through ICT initiatives.

This blatant non-compliance to the government directive is considered normal however it creates the knowledge gap between the business owners and a GITO. GITOs are either enabled or disabled by the structure in which they are placed. It is not all the GITOs of the departments that are kept to play a traditional role of technical support. Few have been set to be the "CIO of the 21st century that are given opportunity to understand the business and engaging in the strategic level". Placing the GITOs in the strategic position will enable them to engage both the GCIO and SITA at a strategic level and share common goals for e-government. There is therefore a need to fully implement the cabinet memorandum 8 of 2000 as a government directive.

5.5 Theme 4: Digital divide (infrastructure and access)

In literature there is a general agreement that information society is thoroughly impacted upon by digital divide. This a common phenomenon in the developing countries where

infrastructure penetration is low compared to the developed countries. The general assumption however is that bridging the digital divide is intertwined with social, economic and political development. The critical argument is that knowing and acting on the challenge enables the success of e-government. Mutula (2008) ascertain that addressing digital divide is like building a highway for the rollout and successful implementation of e-government initiatives. e-Government and digital divide strategies are to be viewed as complementary even though the latter is driven by the CIO.

5.5.1 Access and connectivity

The information society policy framework by the Presidential National Commission on the Information Society and Development (PNC on ISAD, 2006) puts the digital inclusion as one of its pillars. There are many initiatives to respond to the digital divide in South Africa; however the efforts are not coordinated in all spheres of government. The ISAD policy is a direct response reflecting on the nature of challenge issues including access and connectivity. Abrahams (2009) reckons it is a sign for South Africa's political will to bridge the digital divide and a major shift in the country's public policy. She further noted that the proposed strategic actions remain intended statements rather than proposal of solutions like investments. This is reflected by majority of the respondents as lack of infrastructure rollout is one of the major factors of failure in the e-government initiatives.

Government departments' e-services delivery is thoroughly impacted upon by the digital divide. South Africa responded with few access initiatives including the Thusong centres and multi-purpose centres. While these initiatives do not solve the overall complex challenges, they mark a milestone in attempting to resolve the digital divide.

The attributes registered in chapter four as barriers by several departments is the failure by DPSA to roll out infrastructure in rural areas to enable their e-government strategies. One department stated this with frustration: "The problem is the non-coordination and incompetence in DPSA, the mandate was given to DPSA to play a coordination role and make sure that the underserviced areas have ICT infrastructure and ensure that all the Thusong Centres are established and run throughout the country". Access to the internet based services in the rural areas should be addressed the same way that access to electricity and water has been done.

The department of education is also equally impacted and delayed with the rollout of ICTs in schools as per their policy. They stated that "infrastructure rollout has a direct implementation of Education". The seriousness of the lack of infrastructure is seen by the intervention by the Ministerial Committee of deputy ministers in service delivery departments attempting to rollout the ICTs in schools. The Committee has up to now rolled out the Telkom Virtual Private Network to 160 schools as a proof of concept. When political heads engages in implementation, it can be viewed as an indication of a major disaster.

Provision of infrastructure for universal access must be a priority of government to enable universal service. The draft e-Government strategy of 2005 stipulates its mission as follows "Citizens will be offered universal access to government information and services anytime, independent of any geographical and language constraints. The vision is however not yet realised as stipulated by many respondents, it remain a vision statement reflected in government documents. SITA has a potion to share in the failure of the rollout of the Infrastructure. It is however in collaboration with Infraco, Sentech and Telkom rolling out infrastructure in police stations and clinics.

5.5.2 The ability to use the ICTs

The meaningful use of ICT gives the "citizens the right to be heard and to participate in the decisions that affect their lives" (Khan, 2006, p10). Once the infrastructure divide will diminish, the evolving challenge is the e-literacy and ability to use the online services. South Africa is one of the developing nations that are still marked with high illiteracy amongst the senior citizens. The same citizens are categorised earlier in the literature as dependent to government on all basic services. Although the multi-channel access is adopted for convenience to all citizens, online services are regarded by one of the respondent as five times cost effective than the face to face services. E-literacy therefore becomes one of the strategic pillars in the successful implementation of e-government.

Cultural and individual acceptance by citizens to use online services can enable government to serve the citizens efficiently. There is a need for deliberate allocation of resources to develop digital literacy to those who are out of the basic education system. Abrahams (2009) has argued that there has not been registered rejection of e-government and any initiative to

create an information society in South Africa. There could perhaps emanate the issues of trust, privacy and security that many affect the uptake.

e-Readiness is therefore a critical amongst other factors. It is not a short term to establish in a country where general literacy levels are low, basic necessities like housing, food, health services and jobs are not met". It will be even more difficult where basic electricity networks are absent, telecommunication networks and bandwith penetration is low.

5.6 Theme 5: Integration of services and systems

The citizen-centric approach in e-government is focussed on what a citizen wants. Citizen convenience should become a focal point in the implementation going forward. Integration of services to provide a single window to the citizen has been adopted as a vision. The use of the principle of "no wrong door" is seen in many strategic planning documents of government as an indication of the intention to service the citizen differently. Government requires an architectural design that makes it achieve the effective e-Government. Learning from the best practices like the European Union which stated in its five year plan that "the best government is the one that goes unnoticed". That is regarded as a useful way in approaching the e-government concept other than the previous primitive plans of automation and integrating the one way communication to the citizens.

Government has however the power to create such new mode of servicing the public services also known as a "no gap" relationship between government and the citizen. This is a situation where all public organisations deliver modernised, integrated and seamless service for their citizens. Although there is a considerable amount of information that cannot be made available online by government, what is critical in the e-government systems design is to ensure a clear distinction and seamless integration with other non-online services.

Integrated and secure services to the citizens are now considered the heartbeat of e-government. Literature has pointed out the failures of e-government in South Africa are due to adoption of technology without accompanying appropriate skills to manage and integrate them. Integration of services is to happen in many levels across government and this complex function requires strategic thinkers who will break the Silo mentality and the non-sharing culture embedded in levels of government.

5.6.1 Integration at all spheres of Government

There is huge evidence of disjuncture between the national, provincial and local governments in the adoption and use of technologies. Although this research report focussed on the national departments, it was evident that National departments are going to one direction while the local governments are responding to the immediate needs of the citizens. It is worth mentioning that integration emerges as a concrete theme but the integration between the three spheres of government for seamless service delivery was not entertained by respondents.

Provinces are left out to do their own planning and implementation of all the non-interoperable systems. They have some kind of autonomy and that mentality has deepened the Silo approach between the national department and provincial and between provinces. The weakness of the non-coordination of e-government initiatives across the entire government was however mentioned by the independent analyst as failure by DPSA. “There is a lack of coordination of the e-government initiatives that are taking place in nine autonomous provinces and 384 local governments”. The e-government strategy should consider this coordination function and plan accordingly.

5.6.2 A single window of service to the citizen

There is a dire need to come up with a workable solution to renew and modernise the aging and legacy systems of government. This is to be done within the common architectural framework to enable integration of systems. In order to plan for the solution, government has to take stock of all systems, and document all the reasons for failure to integrate. Parallel to the above activities, government must then engage in business process engineering and finalise the enterprise wide architecture. Seamless integration is only achieved where systems supports the engineered business processes. The e-government strategy also stipulates that there is a need for “a well formulated business and IT architecture for successful integration of government systems”. This concept is well understood in the GITOC council, SITA and the OGCIO however coordination of developing departmental business process and architecture seemed a failure this far as stipulated by one of the respondent.

Other reason for failure to integrate alluded to by literature is the fact that CIO are faced with shrinking budgets while expected to deliver expensive integrated solutions for effective

government administration. The respondents have however not raised the budget constraints as a factor or barrier for the development of integrated solution. In fact government is aware that integrated solutions are cost effective and will decrease the IT budget spending in future.

The significant barrier that emerged in the previous chapter is the silo mentality within government departments and GITOs. The fact that GITOC has failed in most of its objectives including the benchmarking of best practices and encouraging common platforms and solutions is clear evidence. All respondents agreed that GITOs do not benchmark on each experiences and best practices and continue to work in silo. This silo mentality is regarded as "tendency of secrecy" towards the development in department by the policy owner. On the other, SITA believes that the non-sharing of best practices is due to the historical legacy and perpetuated culture of no sharing in government. It is also perpetuated by the fact that the "GITOs do not know what they are doing".

Each department still plans its e-government initiative in Silo and hence there is no integration of systems and e-services in government. Even the most successful projects like SARS and eNatis are individual initiatives that are not integrated within the e-government strategy. Central coordination a single strategy that identifies streamline projects is essential however and model of decentralising the implementation of projects could be investigated.

Every respondent commented about the importance of integration but the mandate is not clear who should lead the initiative. DPSA is still regarded as the policy owner and should lead the integration process within the revision of the policies and strategies. Lessons learnt in the previous attempt to implement the policy clearly show that clarity with the mandate and responsibility is the long term solution.

SITA is now playing the Primary Systems Integrator (PSI) role. This role requires the DPSA to provide the SITA with the enterprise architecture and Master systems plan. While SITA is not getting any joy form the DPSA, they go ahead and formulate the parallel e-government strategy with an aim to enable government through new technology of cloud computing to achieve its unknown objectives. It clearly mean that SITA is also preaching an integration approach while practicing the opposite. "SITA developed an enabling e-government strategy with an intention to integrate services and provision of common solutions where possible through an architectural approach and cloud computing".

5.7 Theme 6: Performance

Performance as a theme emerged above others as the research enquiry focuses on the performance of e-government in South Africa and specifically the role of the GITOs. Heeks (2003) has confirmed that there is little research on the actual performance of e-government projects. It is also a complex evaluation to undergo however the success rate and failure rate of e-government projects can be used as a measure of performance. Literature also revealed that there little success rate in e-government projects approximating them to 15% compared to total and partial failures. This failure rate has affected many governments and plans to rollout effective online services to their citizens. There are enough bases for concerns due to the strategic nature of the e-government projects.

5.7.1 e-Government performance

South Africa's failures in e-government projects are well above the 15% that is regarded as the world average. National departments boost a handful of excellence in projects which are department initiated and supported. Within the e-Government strategy of 2005, a number of initiatives were planned while few are reported to be a success.

The sudden drop in the UN rankings from number 61 in 2008 to 97th place in 2010 was a rude awakening call and "an indictment of the state of ICT in the country" (ITWeb, 2011). South Africa was ranked 4th place in Africa after Tunisia, Mauritius and Egypt. This was a clear call for South Africa to make concerted effort to make an immediate intervention. All the respondents agreed that the performance of e-government is poor and attributes many factors for failures including lack of political will and leadership, poor management, digital divide, non-interoperability of systems and lack of skills. Technology is the heartbeat of the e-government projects; therefore the performance of a GITO plays a crucial role in the acquiring of the appropriate solution.

Literature also confirms that a CIO of the 21st century is the central focus from planning to implementation of ICT projects. The CIO's performance in the private sector is visible his/her innovations and projects success is measured by the return on investments through the profit margins. This is different in public sector, as the CIO known as GITO is not measured by the uptake and utilisation of the solution but by pure delivery of the system. The success

should be measured by productivity, cost and time efficiency in serving the citizens ac compared to the face to face services.

5.7.2 GITO performance

The evaluation of the GITOs in the implementation of e-government projects did yield some undesirable results. Phase one of the implementation of Policy was a success, but GITOs have not initiated any improvement of the static phase of websites and portals and that leads to the even more stagnation in e-Government. This abandonment is clear in many departments' websites including the GITOC portal. The GITOC portal is one of the most unfriendly sites and does not get regular attention. The GITOS do not even use any online method for feedback purposes not even taking advantage of the social media through the GITOC portal. Literature review revealed that a GITO should possess at the three main capabilities.

- Business domain knowledge in order to introduce new business processes and models;
- IT skills and competency in order to align business with IT;
- Management skills to be able to manage the procurement process, staff and users.

It is clear with the findings that many GITOs possess only the IT Skills and hence they are relegated to support staff. It is very few departments whereby the GITOs are located at the strategic level. All the respondents agree that in a beaurocratic environment, "the ability of the GITO to direct e-government initiatives is largely dependent on where they are located structurally and their ability to engage on the strategic level". GITOs will not be able to engage on strategic matters if they are used as technical support and only remembered if the Network is down. It has been confirmed by many respondents that GITOs have no voice in strategic matters including e-government.

The independent analysts also pointed out that "GITOs are crucial officers in government departments; however they are not optimally used". He further argued that they are not even used for integration of IT systems within their own respective departments. His impression which was confirmed by the respondents is that GITOs end up involving themselves into operational matters. The placement of GITOs in departments has therefore direct influence in

their performance. GITOs requires full strategic management support from the heads of departments including training to boost their management skills in order to manage better the modernisation process and lead e-government form the front.

Literature also revealed that another factor that leads to failure in e-Government is the fact that it was driven by few technocrats in government with little consultation with the users. This is highly relevant to the relationship between governance and performance. The failure to survey the users and pose a simple question “Did the user actually want or could actually use what they were given” leads to misalignment. It is also confirmed by both the policy owner and GITOs that the citizen is the last to hear about e-government initiative. The anomaly is that the e-government is intended to transform South Africa to become an information society whereby the citizen will be able to participate in the governance process. The culture of non-consultation is perpetuated by the fact that the citizens that are being serviced are poor and regarded as voiceless.

The heads of departments are clear that business cannot be driven from a technology base; hence the GITOs are to prove their worth by strategically using their expertise to initiate solutions that responds to business crisis. Understating and knowledge by the departmental executives that business can derive benefits in ICT will be through the delivery by GITOs. At this point in time, it was confirmed by the respondents that GITOs remains in the gutters as “LAN and desktop managers” and procurement officers who enjoy playing catch-up and react when there are incompatible systems acquired by the executives. e-Government will succeed once the departmental leadership acknowledges that ICT is a key driver in the delivery of many services and therefore needs to be driven at a strategic level.

When GITO remains an afterthought in the departmental strategic engagements and utilised as a printer technician, then a silo mentality is built and perpetuated. From outside their departments, they are viewed as officials that cannot rise to the strategic level. They are also viewed as complicated officials, forever using the ICT jargon that confuses both the executives and their users. One respondent stated that GITOS “want to play technologist while they are supposed to be managing the integration of requirements within their departments and leave SITA to configure the technology solution”. It is clear that the performance of the GITOs is not aligned with the job specifications in the Cabinet Memorandum that establishes the function. Another respondent argued that the performance

of the GITOs has been poor, or can be viewed as no performance at all. E-Government cannot be the placing some few websites which lacks content or provides selected government information to the public".

From the external environment, the GITOs are viewed as officials that are not taken seriously. They perpetuate the silo mentality within their departments while they are supposed to be agents of change in terms of integration of systems both within the department and across all departments. Integration and interoperability is supposed to be the focus and language of the GITO to drive change. This has been proven as failure as there has not been any meaningful benchmarking of solutions between the GITOs and at the GITOC level. Hence the perception in the external environment is that "GITOs are afraid to be exposed of what they do not know" or "GITOs still inhibits some form of secrecy in what is happening with their departments". On the other hand, the GITOs reckons that they have started to talk about the importance of sharing best practice and they just need to transcend to sharing common solutions to enhance one another. Exposure and training will build a GITO of a 21st century, who has the ability to articulate the desired business impact of the organisation before pronouncing on technology solution.

The function of the GITOC is not taken serious by heads of the departments since the council does not work within the integrated cluster system of government, Forum of South African Directors Generals (FOSAD) and other cluster structures. There is lack of coordination of initiatives because many e-Government initiatives are pronounced at cluster level and do not filter down to GITOC. The Council is regarded a think tank in ICT however the clusters do not tap into their knowledge for advice.

In conclusion, the factors identified above are: weak governance framework, lack of leadership and commitment, department's structural arrangements, digital divide (infrastructure and access) and integration of systems. These concepts, coupled to the lessons learnt from the literature review are to formulate the policy recommendations and conclusion in the next chapter.

CHAPTER 6 : CONCLUSION AND RECOMMENDATIONS TO IMPROVE THE PERFORMANCE OF GITOS

6.1 Introduction

This chapter presents the summary of the findings in a form of critical gaps in the implementation of e-government policy focusing more on the role and performance of the GITOs and all the enabling arrangements. The results are generalised to all departmental GITOs in the implementation of e-government policy. The chapter concludes by putting together a policy framework and guidelines in order to tie up the gaps in the further implementation of e-government.

The purpose of this study was to explore the role of government information technology officers (GITOs) and their performance in the implementation of e-government policy and strategies as championed through the GITO Council in the past decade. The study has investigated the successes and barriers to the effective implementation of e-government, issues that pertains to existence of ICT policy, ICT strategy, leadership, funding, skills and e-readiness were a focal point. The study also analysed the structural arrangements between the GITOC, government CIO and SITA as a direct influence in the performance of the GITO and e-government implementation. The exploration is to elicit findings and analysis based on an attempt to answer the following research questions:

The main question was “how is the implementation of e-government policy affected by the performance of government information technology officers (GITOs)”?
The following sub-questions were asked in order to address the main questions:

- How did the e-government programme perform?
- Why is there success in some departments and failures in others when there is a GITO Council to coordinate projects and share best practices and experiences?
- What are the barriers and enablers faced by the GITOs in implementing e-government policy?
- How does the performance of the GITOs impact the emergence of e-government?

6.2 Summary of key findings and gaps

In the literature review, there was a common consensus about the low success rates of e-government projects. Heeks (2003) pointed out that there is little research on the actual performance of e-government projects. It is evident from the literature sought that at least there is 15% success rate of e-government projects. In his research, he divided the performances into three categories:

- "Total failure" a category of all projects that were never implemented or abandoned immediately after implementation.
- "Partial Failure" as a category of projects that have not yield intended results as per the requirements.
- "Success" as a category of projects that have attained the major goals and suffer from less unintended outcomes.

He finally argued that as compared to total and partial failures, there is enough reasons for concerns on the performance of e-government projects (UN, 2003: 2). South Africa has suffered several failures and partial failures in their implementation too and has a handful of successes as reflected throughout the research report.

The overall implementation of the e-government policy has been affected by several factors, however the critical role of the GITO is analysed with its successes and barriers. There are many failures and few pockets of success in the implementation of e-government policy and the findings of this report were narrowed down to the performance of the GITOs, their enablers and barriers that contributed to the end state.

The study identified several areas of weaknesses in e-government policy, strategy and practices by the GITOs, the GITO council, GCIO and the SITA.

6.2.1 e-Government policy and strategy

The overall achievement of e-government anchors on a number of factors. Literature has clearly shown that e-government can be used as a mechanism of achieving an information society, however the performance of such initiatives can be negatively influenced by the levels of e-readiness of the society. Literature has also revealed that the availability and accessibility of information improves the quality of life and enhance the economic

development. Martin (2005) argues that economic development largely depends on information and the way it is exploited. Universal access to computers, internet network infrastructure and ability to use the technology are seen as fundamental to achieving an information society. This information society is also seen to be characterised and linked to the increased productivity and lowering of costs. Creation of an information society has been viewed as one of the pillars of eradicating poverty and leap frogging the stages of through ICT by multilateral institutions. This can be achieved by societies that put together effective policy frameworks, strategies and plans that respond to their social, political and economic needs.

South Africa has shown some political will by developing the required policies, however Abrahams (2009: p1016) argues that the weaknesses in such policy does "account partly for a general failure to build actual electronic services or electronic governance with consequential impact on millions of people, businesses and households".

The e-government policy framework of 2001 is the only authority document that gives strategic direction. It is however outdated and remained a draft since it was never approved after its development. A policy clearly indicates a top down approach, however when the top down approach fails, the total system crashes. This is the case in the e-government programme in South Africa were failures in the policy replicated to non-implementation.

Weak or no policy is equals to non-implementation; this lack of policy direction is due to the fact that the original recommendation of the Presidential Review Commission (PRC) has not been fully implemented. The Presidential review Committee had specifically recommended that the function of ICT policy direction should be placed in the Presidency due to foreseen reasons. The recommendation was however not implemented resulting in the GCIO office being placed in the Public Administration department where they suffered neglect and hence the situation of the un-approved policy on e-government since 2001. This policy is supposed to be an anchor document for the implementation of e-government programme.

The other finding and gap is that the policy development was done without any engagement with the citizen. It is important to conduct a survey in order to determine what the citizens want rather than anticipating which leads to misalignment between government and its

citizens. Engagement with citizens cannot be difficult since there are stakeholder forums in all communities that can facilitate the collection of date and analysis of the need.

The other critical gap with the e-government strategy is that there is no documented lessons learnt from the previous phase and also by those who succeeded or failed in phase two and three. The need for this diagnostic assessment of the problems encountered was supposed to enable the development of the phase two strategy going forward. The strategy also does not introduce the system of monitoring and evaluation so as to close the loop.

6.2.2 GITOs and GITOC performance barriers

The literature review has revealed that CIOs in the public sector are responsible for e-government that presents a number of organisational, managerial and technological challenges. All these challenges have been identified in the previous two chapters ranging from the structures of the GITOs within departments, funding of the initiatives and lack of technical skills in government departments.

Lee ascertains that the complexity is due to involvement of several or multiple stakeholders in e-government projects as compared to the private sector ICT projects. (2010: 229). There is also no single methodology established to implement e-government. However, Yoon and Chae also argue that the right way is to invent a suitable methodology locally that responds to the needs of a specific society (2009: 27). South Africa should therefore implement e-government in a context of a developmental state considering the overwhelming unequal societies and considering the fact that it is a country within a continent known to be a sea of poverty.

The literature review has also pointed out that the inability to manage large IT projects is one of the common possible failures of e-government projects with particular dominance in the public sector (Dovifat et al, 2004). United Nations sums up the impediments of e-government developments as a culmination of fragmented information systems, organisational complexities and deficiencies in ICT skills in the public sector work force. They also argue that these challenges are not exclusive to developing countries (UN, 2010).

The CIO's performance can be measured using different frameworks. Chen and Wu (2011) prescribed the IT capability role as a way to measure the performance of CIO. They argue that a CIO should possess at least three main capabilities and skills as listed below in order to reach maximum impact in any organisation.

- Business domain knowledge in order to introduce new business processes and models;
- IT skills and competency in order to align business with IT and put in place solutions and infrastructure that respond to the business needs;
- Interpersonal skills in order to facilitate relationship between the users and technical staff and also to become an informed buyer.

They further identify and outline several challenges and opportunities of e-government implementation. They include "law and public policy, digital divide, infrastructure development, e-literacy, accessibility, security, transparency, interoperability, education and marketing, public and private partnerships, workforce issues and cost structures" (Ngulube, 2007:5). All these activities have to some large and lesser extent the involvement of the GITO and effect in their performance as per the findings in chapter 4 and 5 of this report.

In summary the major barriers of GITOs performance includes, structural placement of the GITOs in a non-strategic position which is a non-implementation of the Cabinet memorandum that established their inability to operate in a strategic level where there is a need to interpret business requirements into meaningful integrated ICT solutions. This has led to several factors including ineffective utilisation of the GITOs, non-allocation of appropriate budgets to new projects and failures by the GITOS to develop business processes and architectures that should enable integration and interoperability of systems.

Leadership

The lack of leadership has been identified in two various categories. There is clear lack of executive buy-in in many departments to the concept of e-government which can be attributed to factors including lack of understanding that ICT as a critical enabler of business or incompetence. Where the heads of departments shows ownership of the e-government programme, there is clear successes. The GITO cannot be the convincing voice and the driver

of the e-government project while placed in the bottom of the foot-chain in a bureaucratic institution. It was also found that most GITOs are relegated to technical activities and do not appear anywhere close to the executives. This becomes a direct barrier to e-government since GITOs have less knowledge on business initiatives and therefore cannot enable government through ICT. In the same vain, the GITO could not show the leadership and ability to articulate the desire business impact through ICT if they are reduced to technical support. Leadership is therefore to be reflected by a GITO of the 21st century who once given an opportunity to understand the business can start engaging on the relevant strategic mode.

Business, financial and technology skills

The lack of critical skills both within government and SITA has a tremendous effect on the planning for renewal of systems, ensuring interoperability of systems and operation and maintenance of systems. This has been worsened by the exodus of critical skills from SITA to the industry and in return renders the departments to be dependant of expensive consultants. A well thought out strategy on development and retention of critical ICT skills in government can be a long term solution for the e-government programme.

Funding

There is no dedicated central funding from National Treasury for this programme, each department approaches the National Treasury for specific projects whereby most of them are clearly not successful. Government has not invested enough in government IT although there is much noise in the system and society regarding the government IT spending. It is becoming difficult at the stage for departments to reprioritise their objectives in order to fund the unfunded government programmes. It was found that there are good plans and less funding into renewal project and investment projects. To this date less has been done except crisis management and maintenance of the current legacy systems.

The ICT and e-government strategies are still not explicit enough in terms of funding and contribute to the difficulty to secure funding. Value proposition is all that is required in motivation for funding. A clear indication of what projects are going to be put in place and the benefits to government outcomes is critical in the motivations. GITOs will then have to

explain the concepts of e-government in a non-IT language, engage like the rest of business who emphasis the value of the projects other than the technology to be acquired

6.2.3 What GITOs and GITOC needs to do differently

6.2.3.1 Claim their functions as prescribed by the Cabinet memorandum (Cab memo)

The Cab Memo that establishes the function of the GITO is clear on all the strategic and operational matters that the GITO should engage on. It is however noted that departments did not comply fully with the Cab memo. The first step for GITOs is to ensure that the Cab memo is fully complied with, prescribe the job functions as allocated. The main function is to "align the departments' IT strategy with the strategic direction and management plans of the department, considering both IT and to re-engineer business processes" (RSA, 2000). It came out clearly that many GITOs are relegated to desktop and printer support, legacy systems and network supporters which are contrary to their main function.

6.2.3.2 Enable departments to work efficiently through ICT

The GITOs are responsible to enable the departments to be effective and efficient through cost effective deployment of modern systems. GITOs should start developing plans for renewal of legacy systems that will enable integration. This will be achieved by applying an enterprise wide approach to the use of ICT in supporting the department, bridging diverse and client focussed systems, eliminating unnecessary duplication and continuously introducing new systems and technology to improve service delivery.

6.2.3.3 GITOS to become agents of change within departments

GITOs need to start engaging in changing the culture of the departments to embrace the use of ICT as a strategic enabler in planning, business operations, reporting tool and monitoring and evaluation. The GITO is to ensure that departmental executives' level of awareness is raised and understands the importance ICT and enabling the service delivery. This can be achieved by understanding business objectives and re-engineering the business processes to efficiently achieve those outcomes.

6.2.3.4 GITOs must start leading from the front

Technology is evolving at a high speed, GITOs needs to be above board by constantly engaging industry on latest developments and trends. GITOs are to leverage on Open Source technologies that have proven to deliver cost effective solutions where there are budget constraints and feasible. They must also continuously promote common solutions for common requirements within and across the departments. GITOs must develop skills of becoming wise buyers and continuously engage industry for possible partnerships and value for money.

6.2.3.5 GITOs to be business oriented

In order to consolidate activities in IT operations, procurement and successful maintenance, GITOs needs to start thinking like business owners who are determined to reach an objective. The exercise on consolidation of requirements should focus on removing unnecessary duplications and generating cost savings. GITOs must change the Silo mentality and take advantage of the economies of scale available to government via consultation with other departments through the council and possible utilisation of SITA.

6.2.3.6 GITO Council must be a strategic think-tank on ICT matters

The council objectives and functions are also stipulated by the Cab memo and GITOC needs to reclaim the authority over advice on ICT policy direction function. The council requires strong leadership that will enable them to rise above the turf wars between the Government CIO and SITA. The council should be able to use the authority vested on them to evaluate the state of ICT in departments and assist the Minister in issuing directives to departments for rectification.

6.2.3.7 Integration of the Council to the cluster system

The council needs to work within the parameters or direction of a forum that is controlled by the heads of the departments. Director's General clusters are a system of government to ensure integration of services and the council will therefore be able to identify and foster common solutions for departments. Another important factor is that heads of departments will therefore have visibility of what their GITOs are occupied with, have buy-in to their programmes and uplift them to the required strategic abilities. Where the heads of

departments have visibility on the activities of the council, compulsory and full participation of the GITOs in the council will be achieved.

6.2.3.8 Agenda of the council meetings must be aligned with objectives

The council must focus on the set objectives and ensure that its constitution, business plans and reports are in place and approved by the Minister of Public Service and Administration as prescribed. The sharing of best practices between departments through presentations and coordination of the council is vital. This objective of the council should be lifted for priority to ensure that lessons learnt during implementation of projects are shared and departments avoid the same pitfalls. Most of the departments that have stagnated in the implementation of phase two and three require knowledge sharing with the successful departments. The GITO Council can use multiple access channels to the information and resources required by the ailing departments.

6.3 Recommendations

The study identified the above mentioned challenges (leadership, structure, funding and skills) regarding the barriers to performance by the GITOs in the implementation of the e-government in the past decade. The literature review also revealed that the CIOs of the public sector presents the various organisational, managerial and technological challenges that becomes a barrier to the implementation of e-government projects. The analysis of the problem and solutions from the literature review suggests the following recommendations in a format of a policy review.

6.3.1 ICT policy framework

There is a need for an ICT policy framework which clearly stipulates the ICT mandate in various departments or a creation of one Ministry of ICT. This can be attained by instituting another Presidential Review Committee which is going to focus evaluating the activities of the past decade and pave the new way forward. Regarding the fact that some of the recommendations of the PRC were not implemented and that technology has evolved tremendously since 1998, it is a recommended that a recurrent review be prescribed in an Act to evaluate the status of ICT is government every 10 years.

6.3.1.1 Guidelines to the review of the e-Government policy framework

Objectives of the policy must be clear. Each objective must indicate the critical outcomes and the timelines attached to it. The policy should put a system in place to give direction to ICT in terms of strategies, frameworks, standards, principles and guidelines. The same system should prescribe the coordinating functions, management functions through departments and monitoring and evaluation of such functions. Costing of transversal systems and funding of e-government programme should be clearly stipulated in the policy. Similar to the Public Finance Management Act as an example, the policy must also tie up the responsibilities and accountabilities to the various departmental heads in order to strengthen compliance.

6.3.1.2 Recommendations to strengthen the policy and practice

The following recommendations are as a result of the gap and weaknesses identified and revealed by the study. These recommendations are relevant for the Department of Public Service and Administration, departmental GITOS and the SITA. The recommendations are to be considered in the review of the total ICT policy for government and can be translated to any ICT related policies for effective implementation.

Alignment of mandates and policies

The Ministry of Public Service and Administration should ensure the identification of all scattered and conflicting ICT mandates in different departments and presents a solution. The same ministry should ensure that the much needed e-government policy and strategies are approved at the appropriate level and an agreed upon funding model is approved by the National Treasury.

The output of the GITOs and the GITOC should also be aligned with other government processes and decision making bodies (clusters and FOSAD) in order to align business needs to technology requirements. The resuscitation of the ISAD cluster can be considered or the inclusion of ICT programmes within the Governance and Administration cluster is optional.

Capacitate the departments with ICT Skills

There is a need for ICT skills audit in departments so that the DPSA can develop a comprehensive and responsive training programme as a solution to skills development for better implementation of large ICT projects ahead. The ICT training programmes could also

form part of the current public service education and training programmes offered by PALAMA. Highly specialised fields can then be offered through partnership with academic institutions and industry as prescribed by the DPSA.

Partnership in implementation

DPSA, GITOs and SITA are to act as partners rather than rival in the implementation of any ICT project for departments. There is a need for mental and attitude change in the relationship of the three entities to partner for success. Structural arrangements are also eminent regarding this issue if there is no improvement within a year of the review of the policy. The mandate clarification and consistence in leadership of the Ministry of Public Service and Administration could also resolve the turf wars.

There is also a need for DPSA and SITA to engage the National Treasury in pursuant of Public Private Partnership (PPP) with the industry to augment the required capacity and capabilities of government for effective implementation of large ICT programmes. An example of SARS on the e-filling system stands out as a proof of successes of PPP. This will help the government to afford the major renewal of legacy systems, introduce new investment portfolios and ensure business continuity with limited risks.

Independent ICT advisory committee to the Minister

There is a vital need for an independent advisory committee to the Minister of Public service and administration responsible for ICT in government. The GITO Council and all the internal structures that implement ICT programmes requires and objective and independent review by a team of advisory committee constituted by specialists in ICT field and academics who will objectively steer the ministry to the right direction. The committee will advise the Ministry regarding towards approval of strategies, implementation plans and training needs and requirements.

6.4 Conclusion

The study concludes that the performance of the government information technology officers in the implementation of the e-government policy has been poor and needs urgent intervention by both the Ministry responsible for ICT and departmental heads. The intervention will revive the eagerness and harness the further implementation of e-

government programme which aims to improve the access and efficiency of services to the citizens. The intervention to the GITOs performance will succeed if done hand in hand with the revision of policy, strategies and plans.

ICT projects costs government a considerable amount in the fiscal budget, however it has been concluded that the current allocation is not enough to renew legacy systems, enable them to interoperate and provide integrated services to the citizens. It then requires more than what government can afford due to other priorities that faces government along the poverty alleviation. e-Government therefore becomes a secondary priority to enable the primary priorities to be delivered efficiently and cost effectively to the citizens.

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APPENDIX A: INTERVIEW QUESTIONS

Research Main Question - How is the implementation of e-government policy affected by the performance of government information technology officers (GITOs)?

Research Questions	Interview Questions
1. How have selected e-government projects performed?	What is the nature of e-government projects? - complex? What is the overall performance of the projects? What are the areas in which the projects are doing well? What are the areas in which they are failing? What affects the performance of the projects?
2. Why is there success in some departments and failures in others when there is a GITO Council to coordinate projects and share best practices and experiences?	What is the GITOC's role in e-Government initiatives? To what extent can GITOC influence the success of the initiatives? How is GITOC performing in this mandate? How can the GITOC ensure that pockets of excellence are shared amongst all the departments?
3. What are the barriers and enablers faced by the GITOs in implementing e-government policy?	How clear is the e-government policy? What are the identified weaknesses in the e-Government policy? What are the e-Government strategies focussed on? What are the challenges of implementing the e-government policy? What are the new innovations that can be introduced to implement the policy?
4. How does the performance of the GITOs impact the emergence of e-government?	Where must the GITO be positioned in government? How is the performance of the GITO measured? What are the specific areas that affect their performance? What is the impact of GITO's performance to e-government initiatives?

Interview Protocol: - How is the implementation of e-government policy affected by the performance of government information technology officers (GITOs)?

The purpose of this study is to explore the role of government information technology officers and their performance in the implementation of e-government policy and strategies as championed through the GITO Council in the past decade. This study will investigate successes and barriers to the effective implementation of e-government, issues that pertains to existence of ICT policies, ICT strategies, funding, skills, governance and leadership are a focal point.

Questions:

1. What are the critical success factors in implementing the e-government policy of government; of selected departments?
   - Policy / strategies addresses automation / citizen service / information society
   - Other enablers, including innovation?

2. What are the measures used to analyse the performance of e-government initiatives?
   - Nature of projects in terms of complexity / automation / citizen service / information society
   - Areas of success and failure?
   - What affects performance?

3. How does the performance of GITO's impact on automation / citizen service / information society emergence?
   - Measurement criteria?
   - The nature and quality of performance?
   - Results and consequences?

4. To what extent is GITOC fulfilling its role of sharing best practices and experience in e-government initiatives?
   - Extent of influence?
   - The overall performance of GITOC?
   - How can GITOC perform this task differently?