



Doctoral Thesis

Title: Factors relating to and impacting eGovernment readiness in South Africa: A case of the Western Cape Government

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DECLARATION

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First I give GOD the Glory.

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ABSTRACT

Information and Communication Technologies (ICTs) have become increasingly important in enabling governments to deliver services to their citizens. Developing countries have limited understanding of what needs to be in place for governments to be considered ready for the implementation of *eGovernment* projects. As a result, most developing countries embark on these projects inadequately prepared, which results in failure. Large sums of money are spent on *eGovernment* initiatives which do not provide the envisaged benefit for citizens and businesses.

This study therefore discusses factors influencing *eGovernment* initiatives by governments to improve services to their citizens, businesses and among their constituents. It further examines the stage of readiness of the South African government in implementing *eGovernment* initiatives to improve its services. The discussion uses Actor Network Theory (ANT) and in particular the concepts of ‘moments of translation’ and ‘irreversibility’ as a lens through which to understand and interpret the social phenomenon. Although a number of *eGovernment* researchers have argued that strong leadership and clear vision are required to implement *eGovernment* initiatives, the view is that governments have continuously failed to achieve the intended results. *eGovernment* potentials which are well documented in Information Systems and *eGovernment* research literature have not been institutionalised by governments to derive benefits due to limited capabilities in the administration of the public service.

The study used ANT as the underpinning theory. A deductive approach with interviews was used for data collection in a selected provincial government (of the Western Cape) in South Africa.

The outcome of this study is a general framework of readiness for *eGovernment* initiatives in South Africa, and more generally, Africa, to guide and determine the stage of readiness for *eGovernment* initiatives to achieve the intended results.

This research contributes the application of the moments of translation and irreversibility of ANT as a lens through which the interplay between role players of socially constructed phenomena such as *e*Government readiness can be studied. Other forms of contribution are the application of an iterative process to moments of translation, and institutionalisation of each stage of moments of translation, during the implementation of *e*Government projects.

Keywords: Government, *e*Government, Transformation, Actors, Services, Institutionalisation

RESEARCH OUTPUT

Please note that this Doctoral Thesis is not submitted as a collection of the papers below; this page merely lists past research outputs for reference purposes.

Noruwana, N., & Tanner, M. (2012). *Understanding the structured processes followed by organisations prior to engaging in agile processes: A South African perspective*. South African Computer Journal, 48, 41- 58.

Twum-Darko, M., Noruwana, N., & Sewchurran, K. (2014). *eGovernment implementation in South Africa: A perspective of actor network theory*. Paper at 5th International Conference on Economics and Social Sciences, 13-14 December 2014. (1 - 12). Penang, Malaysia.

Twum-Darko, M., Noruwana, N., & Sewchurran, K. (2015). *Theoretical interpretation of e-government implementation challenges in south africa: A case study of a selected provincial government*. Journal of Governance and Regulation. 4(1), 175-185.

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ACRONYMS

Acronym	Description
ANC	African National Congress
ANT	Actor Network Theory
BI	Business Intelligence
BIMS	Bursary Information Management System
BRICS	Brazil, Russia, India and China
BRS	Business Requirement Specification
BV	Best Value
CIPC	Companies and Intellectual Property Commission
CPCR	Centre for Peace and Conflict Resolution
CV	Curriculum Vitae
DPISA	Department of Public Service and Administration
ECM	Enterprise Content Management
EG4C	eGovernment for Consumer
eGovernance	Technology driven governance
eGovernment	The use of the ICTs in public administration
EPM	Enterprise Project Management
ERS	Educator Recruitment System
HR	Human Resource
HSRC	Human Sciences Research Council
ICT	Information and Communication Technologies
IDASA	Institute for Democracy in South Africa
IFMS	Integrated Financial Management System
IS	Information Systems
ISP	Internet Service Providers
IT	Information Technology
KPI	Key Performance Indicator
LRC	Labour Relations Council

MIS	Management Information System
MPCC	Multipurpose Community Centres
NCOP	National Council of Provinces
OPP	Obligatory Passage Point
PAIA	Promotion of Access to Information
PASA	Promotion of Administration Justice
PiTs	Public Information Terminals
SABC	South African Broadcast Corporation
SGB	School Governing Body
SITA	State Information Technology Agency
UX	User Experience
WCG	Western Cape Government (previously known as WCG)

CHAPTER 1: INTRODUCTION

1.1 Introduction

*e*Government has received global attention because of its identified ability to make governments more efficient and effective, and thus to transform relations with citizens, businesses, and government departments (Heeks & Bailur, 2007; Walsham & Sahay, 2005); as well as to increase the perceived quality of public services, which has been shown to have a positive effect on trust in the public administration (Gracia & Arino, 2015).

Despite the attention, according to Heeks & Bailur (2007) there is a range of evidence and insights into *e*Government that has not yet been discovered, such as why *e*Government is being pursued, the true value of *e*Government, and the impact of *e*Government's claimed benefits. Readiness as a strategic challenge to *e*Government in Africa as a whole has also been identified (Aichholzer, 2004; Heeks, 2002). The potential value of assessing *e*Government readiness lies in the opportunity it presents to evaluate the unique strengths, weaknesses, opportunities and challenges of a country (Zaied, Khairalla, & Al-rashed, 2007).

This research study examines the factors influencing *e*Government initiatives by the South African government, aimed at improving its services to citizens, businesses and government departments. The study also sets out to determine the degree of readiness of government in implementing *e*Government initiatives to improve its services. In addition, it aims to develop a generally applicable matrix of readiness for *e*Government initiatives in South Africa, and more generally Africa, that could be used to establish the stage of readiness for *e*Government.

The research approach is interpretive, and the research methodology is that of a single case study of the *e*Government initiatives of the provincial government of the Western Cape (WCG). *(As the WCG changed its name during the study period, from previously*

being Provincial Government of Western Cape (WCG), many of the interviews refer to WCG, and the two terms are used interchangeably in the thesis as a result).

The rationale and justification for using an interpretive, case study approach, along with the empirical processes for data collection, are discussed in Chapter Four. An initial theoretical framework, discussed in Chapter Three, is developed to guide and direct the research process. The results are captured in a general framework and are regarded as a refinement of the theoretical framework. Based on the general framework, a generally applicable matrix to determine the readiness of South Africa, and developing countries in Africa, to implement *e*Government initiatives to improve service delivery, is proposed; this is then used to establish the stage of readiness for *e*Government.

This study is, in part, an attempt to respond to a call for *e*Government research to build its own knowledge about the phenomenon of *e*Governance, and not borrow from reference disciplines, as has been the case. This study therefore makes a contribution by applying the social theory of Actor Network Theory (ANT). In so doing, it draws on the concept of ‘moments of translation’ as a lens through which to determine the factors contributing to the readiness of the South African government to implement *e*Government initiatives. Furthermore, it uses contextual analysis to trace the emergence of the explicit socio-political conditions influencing the readiness to implement *e*Government initiatives to improve service delivery.

This chapter provides an introduction to the study as a whole. In the next section, an attempt is made to provide the rationale for conducting this research, and discusses the objective of the research, the problem statement, and the preliminary research questions which helped to tease out the problem. Thereafter the significance of the research is elaborated, before ending with an outline of the thesis as a whole.

1.2 Rationale of Research

1.2.1 Introduction

In terms of the South African constitutional framework, service delivery sits with local government¹ and as such local government plays the pivotal role of democratizing society and fulfilling a developmental role within the new dispensation. This developmental role for local government serves to help the national government improve the standard of living and quality of life for the country's citizens. This task calls for strong leadership and clear vision in terms of the promotion of good governance.

Good governance entails the existence of efficient and accountable institutions and systems, and entrenched rules that promote development and service delivery that directly affects the lives of people (Onyancha, 2010; Walsham & Sahay, 2005). The lack of good governance, or the absence thereof, has resulted in many service delivery protests across South Africa, leading to loss of human lives and destruction to property. This unrest has been extensively reported in the print and electronic media nationally and internationally. Preliminary investigation suggests that the lack of good governance is the result of inadequate leveraging of the power of information and communication technology (ICT) to address service delivery challenges. Where there has been no use of ICT, local governments have not delivered the intended results or achieved the set objectives. Many ICT researchers and commentators regard the use of the power of ICT to run government efficiently and effectively as *eGovernment* (Onyancha, 2010). However, there are many requirements needed for the successful implementation of *eGovernment*. These requirements have been highlighted by many research institutions, such as the Institute for Democracy in South Africa (IDASA), the Human Sciences Research Council (HSRC), and the Centre for Peace and Conflict Resolution (CPCR), just to mention a few.

¹ <http://www.gov.za/aboutgovt/localgovernment.htm>

It is well documented that governments spend billions on ICT and yet they are not seeing the envisaged improvement (Bwalya, 2009; van Rooyen & van Jaarsveldt, 2003). The increasingly pervasive use of the internet has created new ways in which the public sector can provide services to its citizens. Indeed, the research assumes that ICT has the ability to also transform governments by making them more accessible, effective and accountable. The South African government has adopted “Batho Pele” (*people first*)², as a government framework for equal access to effective public service delivery (Government Gazette, 2002). This is one of the ways which it is using ICT initiatives to alleviate poverty and its effects on social exclusion (Moodley, 2005). Nonetheless, despite all the good things that *eGovernment* promises, implementation is still a worldwide challenge.

1.2.2 Problem Statement

1.2.2.1 Background

Most *eGovernment* projects in developing countries do fail (Dada, 2006; Heeks, 2003; Ndou, 2004; Lessa, Negash, & Belachew, 2012). According to Reich (2007) one out of every three information technology (IT) projects fail because they either miss their targets or fail to deliver the required business functionality. Almarabeh (2010) and Schuppan (2009) believe the underlying potential of *eGovernment* initiatives to achieve the envisaged outcomes is through access to a better understanding of the challenges faced by governments. Heeks (2001) indicates the challenges that confront *eGovernance* relate to service delivery strategies in the developing countries having been done in a non-integrated manner, leading to more money being spent with very little success to create hope for poorer communities and individuals (Heeks, 2001) (*See Figure 1*). This has resulted in ICT for development initiatives in developing countries not making governments effective and efficient in service delivery to citizens, businesses, and employees and among government departments themselves.

² www.dpsa.gov.za/batho-pele

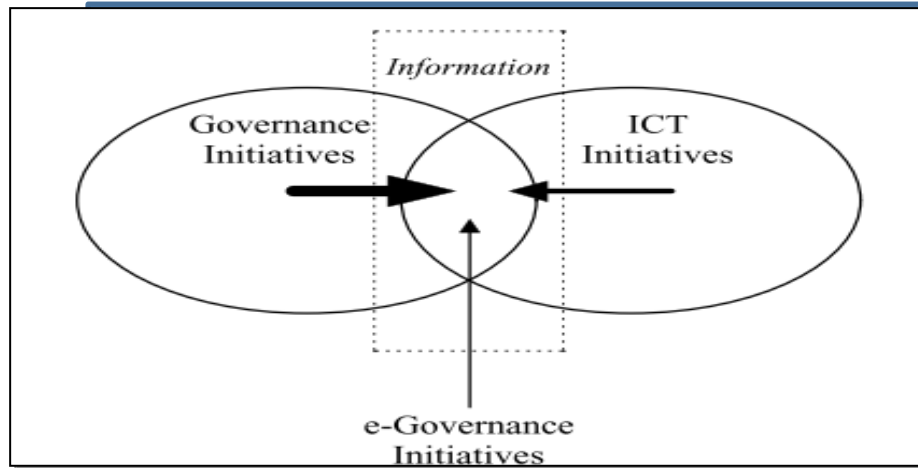


Figure 1: The Integrated Approach to eGovernment³ (Heeks, 2001)

According to Vosloo & Chigona (2010), the strategic challenge of *e*-readiness and the tactical challenge of closing the design-reality gap needs to be addressed.

1.2.2.2 Causes of eGovernment challenges

There are other causes of *e*Government project challenges that mostly lead to what researchers have identified and described as failure. In the year 2000, the cause for *e*Government project failure was identified to be lack of commitment from political leadership and public managers (Aichholzer, 2004; Bhatnagar, 2000). Aichholzer (2004) identified poor management of long-term sustainability as the main cause of *e*Government project failure.

The *e*Government challenges have prevented governments from realizing visible improvements despite the fact that billions are spent on ICT. An estimated US\$ 3 trillion was spent on *e*Government projects in the years between 2000 and 2010, with a 60% rate of failure (Heeks & Bailur, 2007; Reich, 2007). This implies a large amount of money that could have been used to support other services to benefit citizens, was wasted. Since there have not been further studies to test or comment on these claims, this research, through the WCG case study, investigates this rate of failure.

³ This term will be used interchangeably with eGovernment

Given the above statistics and to further analyse the causes of eGovernment project failures, Heeks (2003) categorized eGovernment project results as total failure, partial failure and success (*See Table 1*)

Table 1: Category of projects and level of failure/success (Heeks, 2003)

Project Category	Description	Percentage of Projects
Total Failure	Initiative was never implemented or was implemented but abandoned shortly after the project started	35%
Partial Failure	Major goals for the initiative were not attained and/or there were significant undesirable outcomes	50%
Success	Most stakeholder groups attained their major goals and did not experience significant undesirable outcomes	15%

1.2.2.4 Factors affecting eGovernment implementation

Heeks (2003) states further that eGovernment project failure is caused by the amount of change required to move from a current state to the new envisaged state that he refers to as the design reality gap. The bigger the gaps the greater are the chances of failure. These causes of project failure have been identified and little has been done to improve the situation (Bhatnagar, 2000; Lessa Negash, & Belachew, 2012).

Readiness as a strategic challenge to eGovernment in Africa as a whole has been identified (Aichholzer, 2004; Heeks, 2002). In addressing eGovernment readiness, Heeks (2002) identified six factors that are of relevance to eGovernment in Africa (*See Table 2*):

Table 2: Factors for eGovernment implementation (Heeks, 2002).

Factor	Description
Infrastructure Readiness	Management systems, data standards, records and work processes
Legal Infrastructure Readiness	Laws and regulations
Institutional Infrastructure Readiness	To act as a focus for awareness and to act as a means for facilitation of eGovernment
Human Infrastructure Readiness	Attitudes, knowledge and skills required to initiate, implement and sustain eGovernment initiatives
Leadership and Strategic Thinking Readiness	Leaders with vision who make it happen, senior officials who feel willing or able to champion eGovernment
Technological Infrastructure Readiness	Telecommunications infrastructure

Table 2 above provides additional insight into the levels of eGovernment readiness and how they can be mapped to the categories of failure or success of eGovernment projects. The higher the eGovernment readiness factor, the more likely that the eGovernment project will succeed. In addressing the eGovernment challenges, a review of selected eGovernment strategies and initiatives in the Western Cape Government (WCG) was conducted in order to determine how to get value from these initiatives. It became important to determine the success criteria for eGovernment initiatives and what contributes to such success.

This research intends to contribute to eGovernment research and eGovernment practices that would in turn contribute to more successful eGovernment project implementation and potentially reduce the problem of current high rates of failure.

1.2.3 Research aim and objective

Given the above stated problem of high eGovernment failure rates, the main aim of the study is to explore at what stage a government is ready to implement a successful eGovernment initiative. The key objective of the proposed study is to investigate the factors influencing the readiness of governments in developing eGovernment strategies and implementing initiatives thereof. It is also to determine the criteria for improving eGovernment initiatives in South Africa using the WCG as a case study. By exploring the above areas, an attempt was made to recommend possible avenues to pursue in order to improve the level of success of eGovernment projects in South Africa, in the hope that they may also be applicable to other developing countries. The WCG has been selected and used as a case for this study due to its level of improved eGovernment implementation when compared to the rest of the country. Other Provinces have noted that they intend to replicate what has been done by the WCG (Bwalya, 2009).

1.2.4 Research Questions

Given the problem statement and the research objective, the research seeks to identify eGovernment practices which may contribute to eGovernment projects meeting, or not meeting, the intended goals and objectives for which they were designed. It seeks to stimulate a discussion on the importance of eGovernment strategy review, how to get value from eGovernment initiatives, and how to determine success criteria for implementing eGovernment initiatives. An attempt will be made to explore how these can contribute to addressing the issues associated with implementing eGovernment initiatives. The following research questions were teased out of the problem:

Main Research Question:

How can governments determine their readiness to implement eGovernment projects?

To further understand how the *e*Government factors are being applied under this main general research question in the study, the following sub-questions, which are adapted from Heeks (2002), have been generated:

Sub Question 1: How did the WCG ensure technical infrastructure was ready for *e*Government implementation?

Sub Question 2: How did the preparation of *e*Government implementation necessitate changes to department legal infrastructure?

Sub Question 3: What adjustments were made to the processes in preparation for the *e*Government implementation?

Sub Question 4: How was human capital prepared for implementing and post implementation *e*Government initiatives?

Sub Question 5: How did the WCG address enterprise architecture related issues in preparation for *e*Government implementation?

Sub Question 6: How did *e*-leadership affect the implementation of *e*Government?

1.3 Significance of the Research

Service delivery or lack thereof by municipalities has received much attention from the media in recent years (Heeks, 2002; Nnadozie, 2013; Sibanda, 2012). In South Africa there has been a high expectation of speedy delivery of services to create a better life for all. The majority of South Africans have waited a long time for better living conditions. Social movements and protest actions have characterized sociopolitical life in post-apartheid South Africa (Nnadozie, 2013).

The disappointment of non-service delivery has led to protests in communities where the pace of service delivery has been slow, and unacceptable inequities in access to basic services have remained unchanged despite promises of accelerated service delivery by the authorities (Nnadozie, *ibid.*). The number of protests in South Africa over service delivery increased by over 100% between 2007 and 2009 (Jain, 2010; Lessa, Negash, & Belachew, 2012). Jain (*ibid.*) argues that it is critical to ascertain whether the serious political will to bring about universal access to basic services, has in fact yielded desirable results. Nnadozie notes the following:

“The relative odds of access to basic services in South Africa have remained unchanged in the post-apartheid era for different demographic segments of the society” (Nnadozie, 2013, p.84)

Runciman already asserted in 1972 that the feeling of deprivation of services could contribute to negative attitudes and perceptions towards service delivery, and lead to social movements and protests. People unite to demand what they perceive as their fair share of the system. Theorists such as Freire (1970) have noted that communities and individuals must be active agents in their development generally, and not be passive agents who are on the receiving end. This ensures a proactive development approach by citizens that improves basic living conditions of the poor and also empowers them equally as active stakeholders and responsible individuals.

Although eGovernment is not a new concept or strategy, it is, however, an unusual concept in a number of developing countries, particularly in Africa (Heeks, 2002; Ochara, 2010). Some states are still building the basic information infrastructure or are still involved in articulating the organising vision of eGovernment (Muganda-Ochara, 2008; Nnadozie, 2013). Muganda-Ochara (*ibid.*) further posits that the foreignness of eGovernment implies that a majority of developing countries are still in the process of exploring its meaning. As a consequence it is rare that eGovernment design intentions get realized, particularly in developing countries (Heeks, 2002).

In today's world it is difficult for governments to deliver without appropriate IT systems in place. The South African government has become characterised by non-service delivery. Points where government services are offered have long queues and it is not uncommon for citizens to be turned away without being served. The Departments of Home Affairs, Social Development, and the Companies and Intellectual Property Commission (CIPC, now called CIPRO) are just some of the departments where problems of service delivery are clearly visible.

In summary, attempts to eradicate service delivery challenges by implementing IT systems that will support the processes are not always successful, particularly in developing countries; have failed (Dada, 2006; Heeks, 2003; Lessa, Negash, & Belachew, 2012; Ndou, 2004), at great cost to citizens and society. This makes the identification of readiness a strategic challenge to *eGovernment* (Heeks, 2002). The purpose of this research is to develop a framework that will assist governments that plan to engage in *eGovernment* projects, to evaluate the extent of their readiness *before* the projects are started. This will assist government to be better prepared for the *eGovernment* projects. Readiness for *eGovernment* projects will ensure that the reality gap is narrowed and *eGovernment* projects stand a better chance of success.

1.5 Outline of the Thesis

This thesis is structured into six chapters which are summarised as follows:

1.5.1 Chapter One: Introduction

This chapter provides a background of the research as it is developed throughout the thesis. In addition, this chapter also introduces the research topic together with the rationale behind the study. The research questions and approach are also introduced. The chapter concludes with some background context to the South Africa in which the research will be undertaken.

1.5.2 Chapter Two: Literature Review

This chapter interrogates the existing literature that relates to the phenomena of interest, with the aim of placing the current research project within debates on the concept of *eGovernment* readiness. In this chapter relevant literature is discussed in order to contextualize the research within the domain of IS implementation to improve service delivery by governments. In a nutshell, the literature review gives the context within which current work on *eGovernment* is expounded.

1.5.3 Chapter Three: Theoretical Framework

The theory to underpin the research is discussed in this chapter. The chapter introduces the concept of Actor Network Theory (ANT) and discusses its applicability in the research study as a lens through which to understand and interpret the factors relating to and impacting *eGovernment* readiness in South Africa, and more specifically in the case study of the WCG. A theoretical framework, derived from the combination of literature reviewed and ANT, is used to guide the design, collection and analysis of data. The philosophical stance which is applied in this research is discussed in chapter four.

1.5.4 Chapter Four: Research Approach

Chapter four gives details of the approach followed in conducting the research. The chapter starts off by explaining the philosophical stance of the research, which is interpretive. Then it explores why case study research has been followed, and why the WCG has been used as a case. Three projects from three different government departments in WCG have been studied. Details of the various methods of data collection used are included in this chapter. The study has adopted interviews as a method of data collection. Consultation of *eGovernment* project documentation and policy documents have been used as instruments of triangulation. This chapter also gives a view of the case, its population, history of service delivery and location within the greater South Africa. A perspective of the development of *eGovernment* in the Western Cape Province is also covered. The chapter ends by addressing ethical issues.

1.5.6 Chapter Five: Findings and discussion

This chapter addresses the research outcome based on the research questions, the theoretical framework and how that is aligned to literature consulted. The data that came from respondents is analysed and interpreted in detail and the discussion also includes direct quotations by respondents.

1.5.7 Chapter 6: The theoretical framework revisited

Chapter 6 mainly demonstrates how the findings and discussions have impacted the theoretical framework. The resultant framework is such that there is an introduction of the iterative process at each stage of the development of the network of aligned interests. The iterative process ensures institutionalisation and strengthens irreversibility.

1.5.8 Chapter Seven: Conclusion

This chapter examines the background of this research and the pertinent areas covered. It also briefly gives an overview of the research by touching on some key aspects of each chapter. The chapter then concludes with an overview of the contribution and limitations identified during the research.

1.6 Chapter Summary

The chapter discussed the background and the objectives of the research, described the rationale of the research and elaborated on the problem statement. It further gave indications of how the research has been conducted, and the significance thereof. This chapter also provided an understanding of the unintended consequences of developing countries having most of their eGovernment projects fail. The main consequences are wasted financial resources, service delivery targets not being met, and no benefit being derived from eGovernment projects. This chapter also highlighted the purpose of this research, which is to develop an eGovernment readiness framework that can be used by governments to assess their level of readiness for their eGovernment projects. The outline of the remaining chapters of the thesis is also given. In the next chapter, the

relevant literature of current and ongoing research in the area of this research is provided to give context to the objective of this research.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter scrutinises relevant literature in order to contextualise factors influencing *e*Government initiatives and readiness of government in implementing them. South Africa has recently experienced picketing and protests by citizens in response to non-service delivery. The country is a young democracy where it is necessary for the government to focus on effective government. *e*Government is one of the ways in which government can improve the delivery of services. A number of benefits of *e*Government have been highlighted. The development and implementation of *e*Government is considered one of the most relevant and important evolutions for public administration (Lupu & Lazar, 2015). *e*Government initiatives are aimed at raising the level of government performance in general (Almarabeh, 2010; Heeks, 2001). Therefore, drawing from the works of Heeks (2001) and Almarabeh (2010) *e*Government can contribute to, amongst other things, minimising time and distance impacting on the delivery of government services. Furthermore, Aleem (2012) indicates that quality of *e*Government services is a significant factor that enables efficiency, worthiness, transparency and trust between government and its citizens. Emphasising the end result of implementing *e*Government initiatives, Aleem (op. cit) indicates that it may greatly improve services provided by government to citizens and businesses, while also positively contributing toward public participation in decision making.

The high rate of *e*Government implementation worldwide is proof that it is regarded as an effective strategy that can be used to improve government service delivery. That said, the literature reviewed also reveals that a number of *e*Government initiatives around the world, and particularly in developing countries, did not yield the results as promised by such initiatives (Bwalya, 2009; Heeks, 2001, 2003; Lessa et al., 2012; Managa, 2012; Mnjama & Wamukoya, 2007; Stanforth, 2007).

This chapter begins with a definition and context of *e*Government projects, and an outline of the stages of *e*Government are explored. Thereafter *e*Government in Africa, and in developing countries more generally, and how it differs from *e*Government in developed countries, is extensively explored. Service delivery and governance in South Africa, at a national, provincial and local level is discussed, followed by an examination of *e*Government readiness in South Africa. In a nutshell, the literature review contextualises the research within the domain of IS implementation, and gives the context within which current work on *e*Government is expounded.

2.2 Definition of ‘eGovernment Projects’

The concept “*e*Government projects” is explored in this thesis. It is therefore important to give an understanding of “*e*Government projects” as used in this document.

For the purpose of this thesis, “*e*Government projects” are understood to refer to projects that are aimed at implementing ICT for delivering government services; exchanging information communication transactions; integrating stand-alone systems and services between government and consumers, government and business, government and government; and back-office process and interactions within the government framework.

2.3 Context of eGovernment

The literature has revealed various definitions of *e*Government. *e*Government is seen to be a way of improving government processes, connecting citizens, and building interactions with and within civil society (Runciman, 1972). The United Nations notes on its website that it considers *e*Government to be the use of ICT, such as the internet and mobile communications by governments and government agencies. Freire (1970) posits that *e*Government is about how government organises its administration, rules, regulations and frameworks set out to implement out service delivery and to co-ordinate, communicate and integrate processes. *e*Government can be regarded as transformation of government.

Most researchers and specialists agree to define *eGovernment* as a use of ICT to offer citizens and businesses the opportunity to interact and conduct business with government through using various electronic media (Bwalya, 2009; Heeks, 2001, 2003; Lessa et al., 2012; Managa, 2012; Mnjama & Wamukoya, 2007; Stanforth, 2007).

For the purpose of this study, the definition by Ndou (2004), which states that *eGovernment* represents a paradigm shift for governments from traditional models to more service-based models which view citizens as customers, will be used. Traditional government is characterised by long queues with little hope of ever getting access to services. In these government models, the interface between government services and citizens and businesses are the government officials. The focus is more on the administration, rather than on the citizen. With the emergence of *eGovernment* the focus of governments has changed to the citizens, and to making services available 24/7 from anywhere, hence effecting the total transformation of government (See Figure 2). This transformation ensures that beneficiaries of government services are able to process transactions outside standard government office hours.

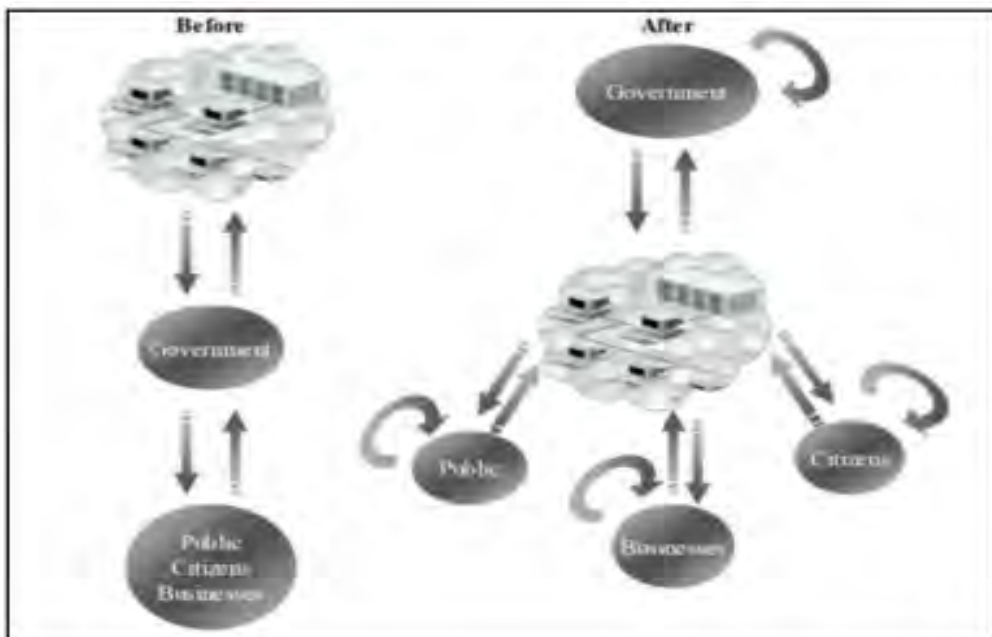


Figure 2: Traditional Government and *eGovernment* (Almarabeh, 2010)

2.4 Aim and Stages of eGovernment Initiatives

The aim of eGovernment is to achieve efficiency in how government delivers services to its citizens and business (Muganda-Ochara, 2008; Pardo, 2000). According to Heeks (2001) eGovernment offers benefits such as: (i) *Automation*, which is the replacement of current human-executed processes where information is accepted, stored, processed, and outputted or transmitted; (ii) *Informatisation*, which provides support to current human-executed information processes; and (iii) *Transformation*, which is the creation of new ICT-executed information processes for supporting new human-executed information processes.

According to West (2004), eGovernment has four stages:

1. *Bill-board stage*: This stage of eGovernment is non-interactive where the public cannot manipulate information or interact with it in any way other than viewing it. The information can be the reports, proposed legislations, publications etc.
2. *Partial service-delivery stage*: This stage enables users to order and execute a handful of services online and the ability to manipulate information. There is availability of search facilities for what they want to see. This stage offers some flexibility in terms of accessing materials in the form they prefer. At this stage, however, there is still limited activity that can occur over the internet.
3. *Portal stage, with fully executable and integrated service delivery, stage*: This stage offers fully executable and integrated online services. Users derive a considerable amount of convenience as all government services can be accessed. There is complete integration of websites and a range of fully executable services are available to citizens and businesses. Some portals even offer translation options for those who do not speak English.

4. *Interactive democracy with public outreach and accountability enhancing features stage*: This stage is sometimes referred to as the “transformational stage”, hence the existence of the term “*transformational government*”. Government web sites operate beyond a service-delivery model to effect system wide political transformation (Heeks, 2002). In addition to having integrated and fully executable online services, sites offer options for web site personalisation to suit people’s interests. It is at this stage that citizens are able to customise information delivery and take advantage of the interactive and two-way communications strength of the internet. This stage can be seen as a stage which all *eGovernment* initiatives aim to reach.

Similarly Heeks (2003) and Symonds (2000) identify five stages of *eGovernment* each listing the appropriate policy, technology and citizen level participation, linked to each stage (See Table 3).

Table 3: Stages of eGovernment (Symonds, 2000)

	1 Information	2 Two-way Communication	3 Transaction	4 Integration	5 Participation
Policy	Policy on Information Collection	Policy on Information Use	Policy on Information Protection	Policy on Information Sharing	Policy on Informational Self-determination
Technology	Appropriate Assess Tracking	Secure Communication Channel	Integrity of Transaction and Storage	Data Access Rights Management	Citizen Controlled Management
Citizen	Awareness	Trust	Choice of Transaction	Consultation	Control

This framework can assist in determining the stage of *eGovernment* by establishing the focus of the policy, appropriateness of technology, and the level of citizen interaction. One study focused on the transformational *eGovernment* stage where governments use the power of *eGovernment* to change government and administration, and thereby improve service delivery by focusing on maximising the use of ICT (Twum-Darko, 2014). Transformational *eGovernment* focuses on the use of *eGovernment* to adapt government services to the needs and actions of citizens. At this stage the focus is on re-inventing government processes and transitioning public services using ICT capabilities.

It is at the transformational *eGovernment* stage where protecting and enhancing of the lives of citizens via ICT capabilities can begin to be evident in the public service.

ICT has made it possible for governments to engage in new forms of collaboration that would have been otherwise impossible (Hunnius & Schuppan, 2012). Furthermore, networks and inter-organisational public service has become feasible. In essence, transformational *eGovernment* is a stage of *eGovernment* where ICT has potential to reorganize the entire public sector (Heeks, 2001; Hunnius & Schuppan, 2012). This calls for public managers to rethink the kind of services provided and how citizens access these. Transformational *eGovernment* goes beyond just the use of ICT; it brings about a profound institutional change that alters relationships and the behavior of actors. It also has the potential of addressing policy making and implementation issues (Almarabeh, 2010; Hunnius & Schuppan, 2012). According to Ochara (2008) the transformation of governance is possible through improved service delivery; which, in turn, can be achieved through the successful implementation of *eGovernment*.

2.5 Overview of eGovernment in Africa

The relevance of this sub-section is to identify the gaps in literature relating to *eGovernment* in Africa, so as to justify this research. The most recent literature on African countries that have been involved in *eGovernment*, is highlighted. This section also shows the trend of *eGovernment* progression in Africa over recent years. The ground covered by governments during these years, and the issues and trends that emerged, assisted in identifying the gaps in literature and the development of the theoretical framework (*See Figure 6*).

According to Heeks (2003), the existing gap between *eGovernment* implementation models and the real conditions on the ground are due to the fact that these models are more suitable for developed countries that are equipped with up-to-date technology. This means there is still a lot of work to be done in developing *eGovernment* in Africa. The argument I am presenting here is that African developing countries should not use

*e*Government models that have been custom-built for developed countries. The challenge for researchers is to develop a generic model that is customised specifically for African Governments (Almarabeh, 2010; Heeks, 2001; Nabafu & Maiga, 2012; Zarei, Ghapanchi, & Sattary, 2010). This is one of the gaps that this research has attempted to address.

*e*Government in African countries is still in its infancy, with countries like Zambia not having an *e*Government strategy (Nabafu & Maiga, 2012). There are a wide range of challenges facing African countries, such as lack of ICT infrastructure; lack of IT skills in human resources especially in rural areas; lack of government ICT policy; etc. Some countries, such as Botswana, are currently considered advanced in terms of ICT usage in sub-Saharan Africa, but still lag behind when compared to countries such as Tanzania, South Africa and Lesotho (Bwalya, 2009). This is due to a lack of both a formal *e*Government strategy and trust by both citizens and employees. These are challenges that should arguably be identified before the initiation of *e*Government projects. A framework that will enable African governments to establish their readiness for *e*Government projects should be developed. Before governments engage in such projects, they should be in a position to establish their level of readiness so that this could potentially be mapped to an expected level of project success. These frameworks do not currently exist and the challenge is for researchers to develop such frameworks. This is another gap that this research seeks to address.

In a study conducted by Bwalya (2009) in Zambia, the finding was that there was (i) limited ICT infrastructure, particularly in the remote rural areas; (ii) websites were not user-friendly, which he states was caused by limited computer literacy levels in the country; (iii) lack of education among the citizens, which contributed to the unwillingness of *e*Government adoption; (iv) lack of trained personnel in handling *e*Government projects; (v) donor funding dependency, which affected the sustainability of the projects; (vi) lack of a formal *e*Government strategy; and (vii) lack of sensitisation of citizens about the *e*Government projects, which resulted in these projects being

ignored. Even though the study conducted by Bwalya (2009) was not focusing on eGovernment readiness as the phenomena of interest, it does mention some of the factors that contributed to the eGovernment project failure in Zambia. These are in agreement with the readiness factors as originally identified by Heeks (2002) (See Table 2).

Nabafu & Maiga (2012) identified a number of requirements necessary for successful eGovernment implementation in Uganda, such as training, trust, IT standards (See Figure 3). Figure 3 indicates that more than 75% of respondents agreed ('A' in the figure caption) on the requirements for eGovernment in Uganda (with an 85% average agreement), while the rest were either not sure ('NS') or disagree ('D').

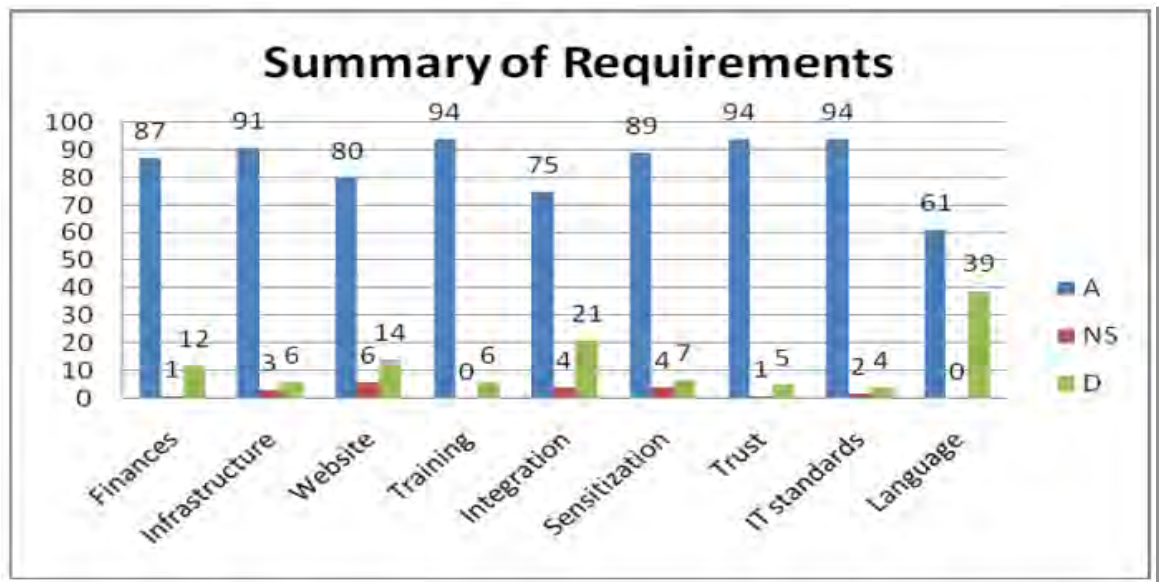


Figure 3: Requirements for Local eGovernment Implementation in Uganda (Nabafu & Maiga, 2012)

Figure 4 reveals that more than 70% agreed on the challenges facing eGovernment implementation (an average of 70.9%), while the rest was either not sure ('NS') or disagree ('D').

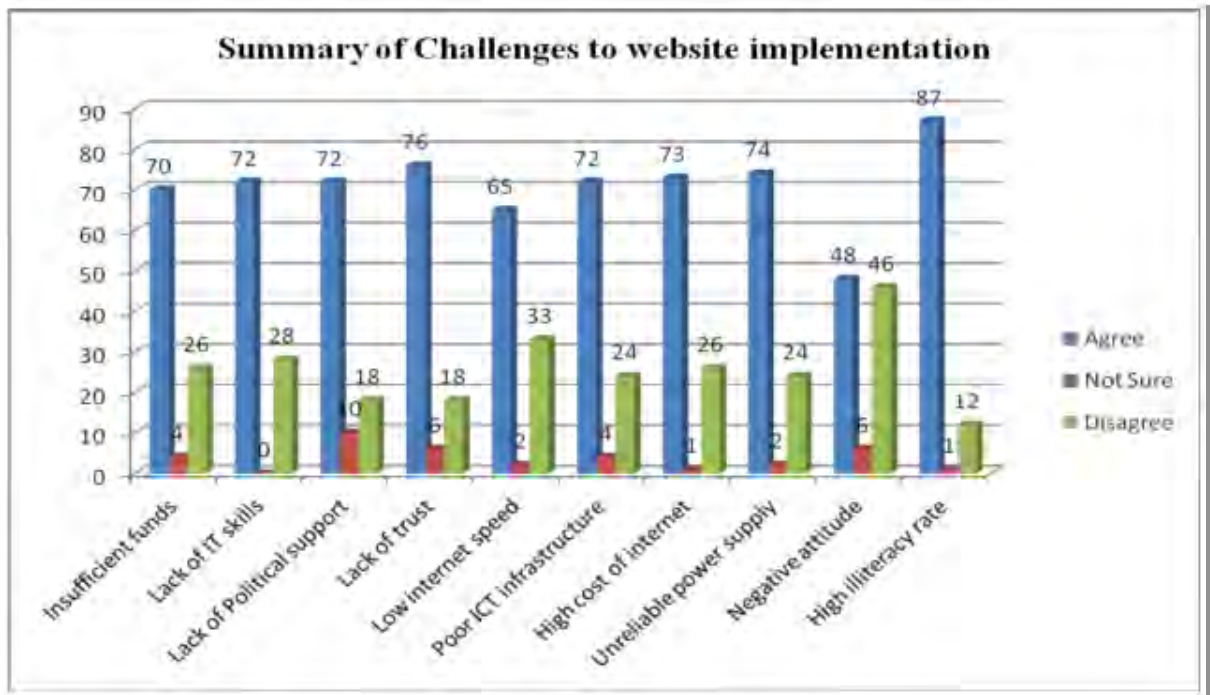


Figure 4: Challenges to eGovernment implementation in Uganda (Nabafu & Maiga, 2012)

Bwalya (2009) states that a number of eGovernment projects were started but had a number of challenges which were associated with citizen adoption. In a survey conducted by the United Nations (2008), Zambia was considered as having a deficient eGovernment capacity. The United Nations (2008) and Symonds (2000) report indicates that Zambia occupied position 158 out of the 182 countries surveyed. Zambia had no online presence in 2008, while infrastructure and human capital relating to eGovernment barely existed. According to Bwalya (2009) and Hunnius & Schuppan (2012) poor usability of websites, trust and ICT infrastructure, were the main contributors to unsuccessful eGovernment implementation. Similarly, the study conducted by Hunnius & Schuppan (2012) in Bahir Dar (*Bahir Dar is in the north-western part of Ethiopia*) revealed that there were technological infrastructure challenges. This resulted in technology requirements being only partly met.

In a study conducted in Tanzania by Wangwe, Eloff and Venter (2012), an issue relating to alignment of the ministry and agency information security policies was identified. This posed a delay in the implementation of the *eGovernment* project. This means, therefore, that it is important to interrogate the policies that guide the operation of agencies once they are appointed.

Human infrastructure is considered one of the critical issues in many African countries. According to Nabafu & Maiga (2012) and Hunnius & Schuppan (2012), Zambia lacks IT skills, especially in rural areas. Furthermore, a study conducted in Bahir Dar by Lessa et al. (2012) and Ochara (2008) found there were inadequacies in human infrastructure in Ethiopia in general. There were shortages of people with Bachelor's degrees required for the project. Even though some had Bachelor's degrees, none had the required experience, but were fresh graduates. They resorted to building their skills on the job even though it was a challenge to reach the desired level of skills and expertise. Another challenge was the general shortage of staff and as a consequence, competency levels fell short. These human infrastructure challenges presented a limitation to the successful implementation of *eGovernment* projects. The project that was studied was classified as partial failure.

According to Mugunda (2009), by comparison the internet market of Kenya is competitive, with a number of internet service providers (ISP) with low barriers to market entry. However, some of Kenya's software applications can be regarded as stage two according to stages of *eGovernment* detailed in Table 3. This specifically relates to data security. Despite the existence of policies that enforce comprehensive data protection, the government portals are not considered sufficiently safe to use (Kessler et al., 2011; Nabafu & Maiga, 2012). There are no encrypted communication channels in all government applications involved in the transmission of citizen data. Vulnerabilities regarding access restrictions were identified despite the fact that user name and password are used to access the applications. This exposes Kenyan government applications to potential illegal access to sensitive information.

According to Kessler et al. (2011) and Zarei, Ghapanchi, and Sattary (2010), Kenya's eGovernment portal only partially fulfills the necessary requirements for technical maturity. The data security issues referred to by Kessler et al. (2011) pose a limitation to the development of eGovernment in Kenya.

South Africa, a country that has been considered as the leader in the Southern African region, has dropped in its global ranking from 61st to 97th (Ntetha & Mostert, 2014). In addition to other phenomena of interest, this study sought to understand the cause for such a drop. Despite the drop in rank, the South African government has invested heavily in the establishment of effective eGovernment strategies over the past few years to enhance service delivery (Ntetha & Mostert, 2014; Bwalya, 2009). The South African government has put in place several policies, regulatory frameworks and ICT infrastructure projects (Mutula & Mostert, 2010; Bwalya, 2009). These policies are to ensure that services are delivered faster, cheaper, better and in a sustainable manner; and ICT tools and information are seen as key drivers of economic and social development. The ultimate goal is to create a better life for the people of South Africa.

The deduction that can be made from the literature is that the factors that contribute to success or failure of eGovernment projects can be categorised into different paradigms (Altameem, Zairi, & Alshawi, 2006). These include the following factors: (i) *Governing factors*, which involve creating shared understanding of the vision of the proposed eGovernment project, strategy, management support and commitment, and leadership; (ii) *Technical factors*, which include IT infrastructure and standards, collaboration between agencies and citizen relationship management; and (iii) *Organisational Factors*, which deal with policy and legal issues, service quality, reward systems and training. These factors are in line with those identified by Heeks (2002).

Literature reveals that the factors that contribute to the success or failure of eGovernment projects evolve around skills, knowledge, awareness, and attitudes of people who are government officials and the public, process and systems.

These can be considered as vital elements during *eGovernment* project implementation. These are areas literature has revealed to be weak in most African countries. What has been evident about *eGovernment* in Africa is that governments that initiated such projects did not adequately prepare nor did they have the knowledge of what was required to make *eGovernment* projects successful.

There is also evidence that there was no structure or framework used as a guide in the initiation and running these projects. As a consequence gaps in literature have been identified where governments in Africa do not show understanding of what needs to be in place for *eGovernment* projects to be successful so that they prepare adequately to reduce chances of failure. On the other hand, a framework which would guide such countries before and during *eGovernment* implementation was identified as a gap. It was considered important to address these gaps in order to increase the chances of *eGovernment* project success in Africa.

2.6 eGovernment in Developed Countries

This sub-section sought to investigate factors that put developed countries at an advantage over developing countries when it comes to levels of readiness for *eGovernment* project implementation. This section also reveals the extent to which *eGovernment* projects in these countries succeed or fail in relation to their readiness, using the readiness matrix as laid out in Table 2. In addition, a readiness comparison between the developing and the developed countries has been done.

In a study conducted by Chen (2006) in the USA it was revealed that most *eGovernment* projects from developed countries have been a success and their strategies may not be directly applicable to developing countries. On the other hand, a study conducted by Annual Global Accenture in 2002 revealed that these countries pride themselves with advanced technological infrastructures, practices, and usage of *eGovernment* facilities by the public.

Chen (2006) further states that there has been a wide gap in these areas between the developed and the developing countries, which keeps widening. Some of the areas where developed countries are strong are knowledge and skills required to develop suitable and effective eGovernment strategies for establishing and promoting eGovernment. (See Table 4).

Table 4: Main differences between developed and developing countries (Source: Chen, 2006)

Readiness Factor	Developed Countries	Developing Countries
History and Culture	<p>Government and economy developed early, immediately after independence.</p> <p>Economy growing at a constant rate, productivity increasing, high standard of living.</p> <p>Relatively long history of democracy and more transparent government policy and rule.</p>	<p>Government usually not specifically defined; economy not increasing in productivity.</p> <p>Economy not growing or increasing productivity; low standard of living.</p> <p>Relatively short history of democracy and less transparent government policy and rule.</p>
Technical Staff	<p>Has a current staff, needs to increase technical abilities and hire younger professionals.</p> <p>Has outsourcing abilities and financial resources to outsource; current staff would be able to define requirements for development.</p>	<p>Does not have a staff, or has very limited in- house staff.</p> <p>Does not have local outsourcing abilities and rarely has the financial ability to outsource; current staff may be unable to define specific requirements.</p>
Infrastructure	<p>Good current infrastructure.</p> <p>High Internet access for employees and citizens.</p>	<p>Bad current infrastructure.</p> <p>Low Internet access for employees and citizens.</p>
Citizens	<p>High Internet access and computer literacy; still has digital divide and privacy issues.</p> <p>Relatively more experienced in democratic system and more actively participate in governmental policy-making process.</p>	<p>Low Internet access and citizens are reluctant to trust online services; few citizens know how to operate computers.</p> <p>Relatively less experienced in democratic system and less active participation in governmental policy-making process.</p>

Readiness Factor	Developed Countries	Developing Countries
Government Officers	Decent computer literacy and dedication of resources; many do not place e-government at a high priority.	Low computer literacy and dedication of resources; many do not place e-government at a high priority due to lack of knowledge on the issue.

There are a number of similarities between the readiness factors originally identified by Heeks (2002) and those in Table 4. Looking at Table 4, it is not surprising that eGovernment projects in developing countries fail while those in developed countries succeed. The developed countries are in a better position when it comes to the readiness factors laid out in Table 4. On the other hand, developing countries seem to be struggling when compared to the developed countries.

2.7 eDemocracy and the Service Delivery and Governance of South Africa

South Africa has a history characterised by a struggle between the “blacks” and “whites” under minority rule of the “whites” who introduced the apartheid policies (Nabafu & Maiga, 2012). In the context of this study, “blacks” refers to the non-white groups of people who were discriminated against by the apartheid government, and “whites” refers to those groups of people who were considered “white” by the apartheid government and enjoyed the privileges of apartheid. This system marginalised black population groups from most aspects of national life. A number of restrictions were imposed on the black population which curtailed their free movement, political representation, ownership of land, and equal access to education and health services, and to basic services (Nnadozie, 2013).

The collapse of the apartheid government in 1994 marked a new beginning for South Africa and the Southern African region of the African continent.

The collapse of apartheid gave rise to expectations and hopes that the democratic government of South Africa would introduce policies that would progressively alleviate poverty, inequity and inequality (Bwalya, 2009; Nabafu & Maiga, 2012; Nnadozie, 2013; Padayachee & Desai, 2013). The policies of the new government focused on poverty that prevailed in both rural and urban areas, as well as serious inequalities in access to resources, infrastructure and social services, especially among the majority black population (Nnadozie, 2013). Policies and programmes ushered in by the new government sought to address the inequalities in different spheres of people's everyday lives. The new government policies helped to formulate a vision of a post-apartheid government which seeks to establish a society that provides a high and equitable quality of life for all South Africans (Nnadozie, 2013). According to Padayachee and Desai (2013), and United Nations (2008), critical questions are being asked about the country's ability to meet its targets laid down in its macro-economic programmes in terms of poverty and inequality, given the fact that the expectations of South Africans have not been met.

South Africans have trusted the new democratic government with the delivery of jobs, wealth, healthcare, better housing, and bringing services to the people. The government of South Africa could meet these challenges by, among others, engaging in *e*Democracy. According to Maran (2005) and Bwalya (2009), *e*Democracy can be a significant tool to strengthen democracy, bring people back into a healthy political process, and assist in resolving complex issues by drawing on widespread citizenry in respective countries. For the purpose of this thesis we shall define *e*Democracy as the processes and structures that encompass all forms of electronic interaction between government and citizens. It is important to understand the concept of *e*Democracy as an extension of *e*Governance. *e*Democracy would assist in bringing back dignity to the people of South Africa. As a consequence, the first term of the African National Congress (ANC) government focused on legislative developments with the purpose of creating a non-racial, non-sexist, and democratic country (Padayachee & Desai, 2013).

The introduction of democracy in South Africa, was marked by the adoption of the interim constitution in November 1993, and was the beginning of a new political, social and economic order. The new constitution divided South Africa administratively into nine new provinces replacing the previous four provinces and ten "homelands". These nine provinces consist of 46 district and 6 metropolitan municipalities.

According to Barrett (2005), Humphreys and Bates (2005), Nabafu and Maiga (2012), Sartorius and Sartorius (2013), and Wangwe, Eloff, and Venter (2012), a decline in economic growth as a result of limited foreign investment has magnified problems of poverty and income inequality not only in South Africa, but also in Sub-Saharan Africa. This situation has rendered the countries in the region inefficient and unable to provide basic services to their citizens. As a consequence, poorer communities within these countries are often denied basic services such as refuse removal, water and sanitation. Poor service delivery, therefore, has direct health and economic consequences in South Africa and the Sub-Saharan countries. As a result, the governments of this region are confronted with health and development problems that can only be resolved across multiple government departments (Sartorius & Sartorius, 2013).

South Africa is regarded as an upper middle-income country on par with advanced emerging economies like Brazil, Mexico, and India (Mugunda, 2009; Nnadozie, 2013) but it exhibits disparities when it comes to service delivery. These disparities can be witnessed at various levels: Provincially, Limpopo followed by Kwazulu-Natal and Eastern Cape are seen to be the poorest in terms of service delivery; conversely, Gauteng and the Western Cape reflect higher levels of service delivery (Kessler et al., 2011; Sartorius & Sartorius, 2013). At local government level within provinces, service delivery differs from local government to local government, depending on the predominant race and levels of income.

According to Nnadozie (2013) between 1996 and 2007, population group appears to be a stronger factor than household income level in explaining the disparities in access to water and to formal housing. The province of the Western Cape has demonstrated the highest level of service delivery with by far fewer observations with poor delivery compared to other provinces (Sartorius & Sartorius, 2013). Cape Town Metropole, followed by the Johannesburg Metropole, is the highest in terms of service delivery in amongst the six metropolitan municipalities. Conversely, the lowest level of metropolitan service delivery was demonstrated in the Tshwane and Ekurhuleni Metropoles.

In view of the above, the South African government arguably needs to take advantage of the benefits offered by *e*Government in order to be able to deliver on its promises. The efficiency, effectiveness, accessibility and accountability to the citizens are of paramount importance in the growing democratic country. Using ICT along with other reforms, governments are able to deliver a wide range of services in a manner that is timely, efficient, economical, equitable, transparent and corruption-free.

A further effect of the adoption in 1993 of the new interim constitution, South Africa was divided into three tiers of government: the national government; provincial government; and local government. Each level of government had their own mandates, which were all geared towards a common goal. These tiers are discussed in the next subsections. It is important to understand the different roles of these levels of government to business and citizens as this would better prepare the government and also focus where *e*Government is most needed.

2.5.1 National Government

Political leaders in South Africa have clearly articulated the development vision for South Africa of: “Excellence in governance and a better life for all irrespective of race, age and income status” (Meerman, 2010; Kessler et al., 2011).

eGovernment can be used as a method of delivering government services through the use of ICT, thus supporting the development vision of the country.

The Constitution of South Africa requires that all spheres of government work together and participate in the development of programmes to address poverty⁴. These include underdevelopment, marginalisation of people and communities, and other legacies of apartheid and discrimination. The strategies of national government and national priorities, have an impact on those of provincial and local government. The Presidency exists to ensure that the President is able to execute his/her constitutional obligation to promote unity and to do that which will enhance the Republic of South Africa.

It is argued here that given its potential to help meet the country's vision, eGovernment should be something initiated from the top. This means that it should be one of the strategic priorities of the country and resources should be deployed towards getting ready for eGovernment. From the vision it can be deduced that eGovernment in South Africa is very much needed to make the vision a reality. What stands in the way of the vision becoming a reality is successful implementation of eGovernment projects. It thus becomes imperative to establish factors that need to be considered to increase chances of success of such projects. Therefore, eGovernment should attract the attention of leadership at national level.

2.5.2 Provincial Government for development

Provinces are governed by the National Council of Provinces (NCOP) in which all nine provinces are represented⁵. The mandate of the NCOP is to ensure provincial interests are taken into account at the national level of government. The NCOP consists of nine delegations of ten members from each of the provincial legislatures. The NCOP participates in the national legislative process and provides a national forum for the public consideration of issues affecting the provinces.

⁴ <http://www.thepresidency.gov.za/pebble.asp?reid=3>

⁵ <http://www.sals.gov.za/show.php?show=14>

Local government can, through organised formations, participate in proceedings of the NCOP although may not vote. In terms of Section 155(6)(a), the provincial legislatures of the nine provinces have an obligation to monitor and support the local government in their respective provinces. Furthermore, in terms of Section 155(7), the legislatures have legislative and executive authority to see to the effective performance of municipalities in respect of those competencies. The essence here is for the national government to understand the needs of the people on the ground as presented by the NCOP. The more the NCOP puts pressure on the national government to address the provincial interests, and sustainable development through the use of ICT, the more the national government sees the need for eGovernment. This further enhances the need to address the factors influencing successful eGovernment for rapid and sustainable local economic development.

2.5.3 Local Government for sustainable local economic development

Local government in South Africa is regarded as a sphere rather than a tier of government (Kessler et al., 2011; Sibanda, 2012). According to the Constitution of the Republic of South Africa, 1996, section 40(1), national, provincial and local spheres of government are distinct, interdependent and interrelated. The constitution further states that a municipality has the right to use its own initiative in governing affairs of its community, subject to national and provincial legislation. The mandate of local governments is clearly stipulated in the constitution of South Africa as being to “*ensure the provision of services to communities in a sustainable manner*”. In this regard, eGovernment becomes imperative at local government level.

The new developmental mandate states that municipalities are firmly rooted in local communities and should be committed to working with citizens to find sustainable ways to meet their social, economic and material needs while improving their lives (Managa, 2012). This attests to the administrative incapacity and lack of necessary skills to render services involving communities and private expertise.

According to Sibanda (2012), there is a need for customer-focused service delivery to be monitored to ensure quality service delivery in local government spheres. He further states that municipalities should be seen as service providers and citizens as consumers of such services. Unless local governance is strengthened, the country is likely to witness more service delivery protests that could be accompanied by more violence than the previous ones (Managa, 2012; Ntetha & Mostert, 2011). In *eGovernment*, the focus is the citizen who is seen as the customer (*see Figure 2*). This has necessitated working towards making services available 24/7. *eGovernment* can be considered a necessary catalyst that would trigger the paradigm shift for governments from traditional models to more service-based models which views citizens as customers.

The mechanisms through which the local government mandate should be carried out are enshrined in section 153 of the Constitution. Section 195 of the Constitution also stipulates the imperative for efficient public service delivery. This efficiency can be achieved through *eGovernment*. It is explicitly stipulated that public administration should adhere to a number of principles, including impartiality, equity and efficiency, economy and effectiveness in the manner in which resources should be utilised. The municipalities should have the ability to consistently meet or exceed perceived customer and citizen needs (Mutula & Mostert, 2010; Sibanda, 2012).

The concept of continuous improvement of processes and systems becomes imperative. Economy, efficiency and effectiveness potentially provides opportunities for monitoring customer satisfaction by focusing service delivery on customer needs and using consultation feedback from customer-focused quality service delivery for continuous improvement of service delivery (Altameem, Zairi, & Alshawi, 2006). Sibanda (2012), further states that Best Value (BV) and Batho Pele can further be employed as critical monitoring tools for promoting the notion of customer-focused quality service delivery. *eGovernment* would thus contribute substantially towards continuous improvement and customer-focused service delivery. *eGovernment*, therefore, should be considered a critical factor in the sustainability of local governments.

In summary, it has been argued that eGovernance is a critical factor that could assist national, provincial and local governments in meeting their mandates. But is South Africa ready for this.

2.6 Readiness for eGovernment in South Africa

eGovernment in South Africa has a particularly important historical and social context due to the legacy of apartheid (Trusler, 2003). Trusler (2003) and Chen (2006) identify a gap between the plan and what the policy says should be happening. This gap could be attributed to lack of government capacity to meet the policy objectives. These could include a high level of inequality amongst the citizens; a weak ICT infrastructure (particularly in rural areas); a general lack of government ICT readiness; and other (apparently) more pressing demands in the public service which make ICT development a lower priority. The gaps in policy can be considered as inhibitors of success in eGovernment implementation and as such, the government can be considered not ready for eGovernment.

2.6.1 Policy development in South Africa

The eGovernment policy was drafted by the Department of Public Service and Administration (DPSA) in 2001. This draft was preceded by an extensive two year consultation process with various private sector representatives, community organisations and public service officials (DPSA, 2001). This policy outlines a ten year eGovernment implementation plan in South Africa. The authors of the document attest that it has drawn on tested worldwide practices and seeks to avoid the unnecessary mistakes, and instead improve on the successes of other governments that have implemented eGovernment initiatives (DPSA, 2001).

Policies are a critical component in determining the performance of firms, farmers, households, public sector bodies, and other economic units (Nnadozie, 2013), and are imperative in order to progress economically and socially and their formulation is a central function of government (Corkery, Land, & Bossuyt, 1995; Nnadozie, 2013).

The capacity of government to manage policy-making processes has a bearing on the quality of the policies. Therefore, it is useful to understand and evaluate the process followed in developing policies in the South African government, in order to assess its quality. The economic development of a country cannot be divorced from the quality of its policies, the decisions taken, and the processes involved. Developed and developing countries differ considerably in their ability to formulate and implement policies that will generate improved development performance. This also applies to *eGovernment* policies.

Corkery et al. (1995) posits that lack of attention to implementation strategies during policy formulation may result in shortages of required resources and underestimation of the complexity of the policy. This can mean that good policies that have been well formulated may not bring the desired results if poorly implemented. When it comes to policy formulation, it is not just a matter of knowing what to do but also how to do it. On the other hand, it is essential to know how organisations and processes handle demands generated in the institutional environment, and how different actors behave in the policy-making process (Corkery et al., 1995). By the same token, institutional capacity is a complex and inadequately understood area when it comes to policy development. This has a sharp contrast to decision making. Enhancing institutional capacity by developing people with the required skills and knowledge and by developing enabling organisational structures and systems often takes quite a long time. The development of institutional capacity requires that both governments and external agencies take a long-term view. This needs sustained commitment and support to measures required to strengthen this capacity.

Post-1994 South Africa became the home to the “rainbow nation” and the government is faced with a difficult task of addressing an apartheid legacy of inequality and poverty. This means policies that engage a wide variety of stakeholders need to be developed. According to Trusler (2003) and Nnadozie (2013) current practices fall short of the policy objectives.

Even though *e*Government implementation is considered a solution towards rectifying the situation, lack of properly developed policies still stand in the way of such development. According to Wikipedia, “Corporatism”, is the involvement of groups of people in society (such as agriculture, business, ethnic, labour, etc) in decision-making on the basis of common interest. Corporatism is based on interpretation of community as an organic body. This means that planning and policies are controlled by large groups of stakeholders. There are two schools of thought within the “Corporatism” literature. The one sees corporatism as a major obstacle to working class mobilisation and change, and the other sees it as a reasonably desirable outcome of post-capitalism (Higgins, 1985; Nnadozie, 2013). This will now be discussed in more detail.

2.6.1.1 The Corporatist School of Thought

The Corporatist school of thought sees the policy formulation process as an iterative, often haphazard, and highly political process (Nnadozie, 2013). Baskin (1993) considers bargaining framework and a strong union federation as necessary, even though not sufficient, conditions for a successful corporatist. This school of thought holds the view that policy formulation starts from the premise that the trade union movement has to engage with what they perceive as the rise of corporatism in South Africa (Padayachee & Desai, 2013; Schreiner, 1994).

According to Baskin (1993) and Maran (2005) the corporatist path is, in effect, unavoidable. The question this school of thought seeks to address is not whether, but rather how to engage with corporatist developments. Even though authors may be silent about the dynamics of corporatist schools, they all see it as a relationship between capital, labour and the state (Schreiner, 1994).

2.6.1.2 The Anti-Corporatist School

Anti-Corporatists see policy formulation as a rational outcome of detailed data analysis with choices optimised to suit existing circumstances.

This process has typically been seen as a linear model within which the complexities of policy making are reduced to a sequence of steps with an identifiable beginning and end (Linder & Peters, 1989). It assumes that decisions are made centrally in a 'top-down' manner and on the basis of analysis by highly trained personnel (Corkery et al., 1995; Sartorius & Sartorius, 2013).

The anti-corporatist view of policy formulation processes has major flaws. It draws an artificial line between the process of policy formulation and the process of policy implementation. It fails to evoke or even to suggest the distinctively political aspects of policy-making, its apparent disorder, and the strikingly different ways in which policies emerge (Corkery et al., 1995; Sartorius & Sartorius, 2013). It also provides little understanding of the process of designing policy alternatives, nor of the politics, rules and intergroup competition that influence policy-making.

2.6.1.3 The Process of Policy Formulation

A study by Corkery et al. (1995) identified the institutional environment, the core policy formulation process within government, and the involvement of civil society, as the three main components forming the element of governance (Corkery et al., 1995). In the policy formulation process seven stages were identified (See Figure 5).

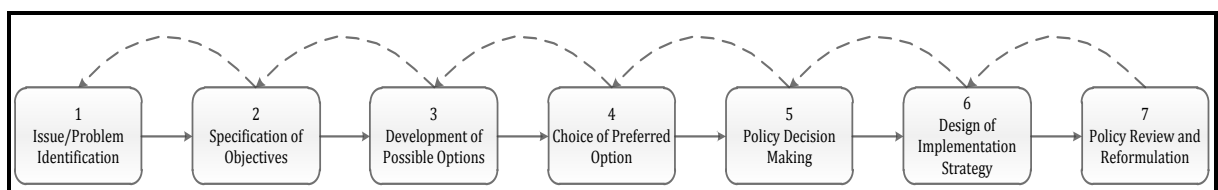


Figure 5: Policy Formulation Process (Corkery et al., 1995)

Even though the stages are presented in a linear sequence, the process does not normally progress in an orderly manner. The process is iterative and involves doubling back to make adjustments to earlier stages due new information that may have surfaced. These seven stages will now be considered in more detail.

(i) Identification of Policy Issue

In the policy formulation process, it is important to start off by having a clear and detailed understanding of the issue which warrants policy formulation. Due to the fact that there may not be clear distinctions between real issues and symptoms, it is often not easy to decide precisely on the issue that needs to be addressed. What has been considered a policy issue at this stage has a significant impact on the evolution of the policy process. It is important that when issues are identified, they are brought to attention, and then pressure exerted to have action taken is an important political tactic. By the same token, keeping attention away from certain issues is as important.

How the process of policy formulation unfolds, among other things, will depend on whether the policy issue is perceived as a crisis or as orderly progress of a political agenda. It is noted that:

“Pressures for reform, stakes involved in change, the level of decision-makers involved, the degree of change considered and the timing of reform all influence the process” (Corkery et al., 1995:pg 21).

In the case of South African eGovernment policy, the focus has been on cost effectiveness, improved service delivery and increased productivity. These factors were seen as having an impact on the IT value.

(ii) Specification of Objectives

A general idea of the objective to be achieved should be brought to the fore. Even though the objective will be tentative at this stage, it is necessary to agree a statement of the objective. Due to the iterative nature of the policy formulation process, the statement of objectives may be modified in the light of information gathered along the way. It is not uncommon for actors and stakeholders involved to have different understandings of what this objective means.

(iii & vi) Development of Options and Process of Choice

Choice is important in the policy formulation process. Choice may be between different options with differing resource requirements and differing impacts on perceived problems. It is important to be aware that an option might achieve one objective, or even be disastrous for the achievement of other objectives. The policy formulation process seeks to identify and select best options which stakeholders will agree to. Options are sometimes each given a different weighting based on their advantages and disadvantages in relation to realising the objectives of the policy. Who stands to gain and who stands to lose would also be spelt out within those options. The elimination of certain options as politically unacceptable, and the modification of other options to make them more politically acceptable, may take place during the analytical process.

(v) Policy Decision-Making

The nearer decisions are to the apex of the policy pyramid, the more the process involves confidential discussion. Often only decisions are recorded and it is difficult to get access to what really happened during the meetings.

(vi) Design of Strategies for Implementation

Promulgation and dissemination of a decision among the actors and stakeholders emerges as a significant element of the policy formulation process. This stage may be regarded as a bridge between formulation and implementation of the policy.

(vii) Policy Review and Reformulation

After the policy has been implemented, it may be reviewed. The review may be triggered by circumstances that would prevail.

In South Africa a gap between the policy targets and implementation has been identified, as a result of practices failing to meet the targets set out by the policy (Trusler, 2003). Coordination between government departments seems to be a major problem with regards to the overall eGovernment policy. Trusler (2003) posits that at best, government departments do not initiate eGovernment projects at the rate that is expected, and at worst they are not able to initiate these projects at all.

The large gap between policy and practice is evidence that things are not going well with *eGovernment* implementation in South Africa. Even though there is willingness to pursue *eGovernment* there is, among others, lack of capacity to follow this through due to powerful resistance to change by public officials (Munyoka & Manzira, 2013; Sartorius & Sartorius, 2013; Trusler, 2003). On the other hand, it appears that limited capacity to implement *eGovernment* policies is a major drawback to the implementation of *eGovernment* initiatives in South Africa. Due to the cited issues, a gap between the espoused *eGovernment* policy and actual practices is widening.

In line with Nnadozie (2013) and Munyoka & Manzira (2013), in many developing countries *eGovernment* projects die mid-way through implementation. The authors called on policy makers in these countries to put mechanisms in place for constant monitoring and evaluation of *eGovernment* project implementation in line with ICT policies, to ensure that *eGovernment* projects reach maturity levels. The fact that it takes a long time to update policies in developing countries was cited as one of the problems (Sartorius & Sartorius, 2013) that impeded the progress of *eGovernment* projects and South Africa falls in the same category. This has a compounding negative effect on the strategic alignment of *eGovernment* policies and implementation. It is important to ensure that policies remain relevant since ICT and *eGovernment* are very dynamic.

Another finding by Munyoka & Manzira (2013) reveals that with limited data on ICT access, use and impact, it will be difficult for policymakers to design, analyse, evaluate and review national ICT policies. Meerman (2010) and Munyoka & Manzira (2013) state that South Africa has been one of the best African countries that follow the major phases of policy formulation. They further state that South Africa started out as a leader in *eGovernment* implementation when compared to other developing countries. But a decade later, it has been surpassed by states that were much less developed. The reason for this has been found to be the failure and lack of urgency on the part of the designated government departments; and failure of the tasked government agencies to come up with an updated ICT policy to guide implementation on the ground.

ICT policy has been under revision since the publication of the 2001 interim policy framework. Up until now, the update is not available (Cloete, 2012; Sibanda, 2012).

Given the policy related gaps cited, it is understandable why South Africa and the rest of the developing countries are lagging behind in eGovernment implementation. This research has the challenge of coming up with strategies that will ensure that policies, among other things, are addressed adequately to eradicate the policy-related problems.

2.6.2 E-Government infrastructure in South Africa

The South African government has developed several policies, regulatory frameworks and ICT infrastructure projects in order to enhance service delivery (Mutula & Mostert, 2010). The government ICT-related policies were based on the need for services to be delivered to all the citizens of South Africa faster, cheaper, better and in a sustainable manner (Ntetha & Mostert, 2011). On the other hand, ICTs remain important tools of economic and social development. This makes ICTs key in the creation of a better life for the people of South Africa⁶. Policies like the Freedom of Information policy, ICT policy, Universal Access policy, Universal Services and Access policy, as well as the already mentioned Batho Pele, all aim to create a regulated environment for the delivery of eGovernment.

Various government agencies like State Information Technology Agency (SITA), Govtech, Universal Service Agency, Savant and Infracore, were established with the aim of addressing issues of capacity building, providing the required broadband capacity, promoting the attainment of universal services, providing effective and efficient ICT products and services, and promoting dialogue between stakeholders with a common interest in improving government service delivery (Ntetha, 2010; Sibanda, 2012).

⁶ Polity.org.za, 2007

In terms of ICT infrastructure, South Africa is the leader in Africa and the 20th largest consumer of IT products and services in the world (Managa, 2012; Ntetha & Mostert, 2011). South Africa has the most developed telecommunications network on the continent with several international corporations that are recognised as leaders in the IT sector that operate subsidiaries from South Africa (Burger, 2010). South Africa also has a strong mobile phone industry, more than 20 broadcast-service radio stations and four commercial radio stations broadcasting in the 11 official languages. South African Broadcasting Corporation (SABC) provides news and current affairs services to radio and television (Burger, 2010).

The 2010 World Wide Worx study found that there were 5.2 million internet users in South Africa, a number which is expected to double by 2014 (Ntetha & Mostert, 2011; Sibanda, 2012). Wireless broadband subscribers also grew by 88% during 2009, mainly due to the deployment of 3G cards⁷. In an effort to narrow the “digital divide” in remote, rural and disadvantaged communities, a large number of tele-centers, more commonly known as multi-purpose community centres (MPCCs), have been introduced and implemented by the government (Cole & Roman, 2001; Snyman, 2007). According to Ntetha & Mostert (2011), MPCCs provide users with access to computers, the Internet, fax machines and copy machines.

The aim of MPCCs is to empower the poorest and most disadvantaged communities with access to information and government services. They are described as “one-stop shops” through which communities can access government services, information technology, and training (Ntetha & Mostert, 2011). In conjunction with the MPCCs, the government has also introduced mobile Public information Terminals (PiTs) to under-serviced areas which provide access to government information via the internet.

⁷ IT News Africa, 2010

With all the infrastructural developments in South Africa, the country is still lagging behind when compared to the developed countries. Even though to a lesser extent when compared to other developing countries, there is still a need for further infrastructural development.

2.7 Chapter Summary

In this chapter *eGovernment* has been contextualised as the paradigm shift for governments from traditional models to more service-based models which view citizens as customers. The chapter has outlined the stages of maturity of *eGovernment* as being bill-board, partial service-delivery, portal, and interactive stages. For each stage of *eGovernment*, there are corresponding policies, technologies and types of citizen. From the literature, it became evident that *eGovernment* in African countries is still at infancy stage, with some with not even having an *eGovernment* strategy. The major challenges relating to *eGovernment* are that African countries are faced with lacks - of infrastructure, IT skills, policy development, etc. It has also emerged that even though South Africa is considered a leader in *eGovernment* when compared to other African countries; it still has a lot of work to do. There is still a wide gap between developing and developed countries in terms of *eGovernment* progress. South Africa with its young democracy, has serious challenges of service delivery which necessitates implementation of *eGovernment*. The Government of National Unity has been entrusted to bring the services to the people and failing to do so might lead to loss of trust. It is important that all three levels of the South African government carry out their mandate in order to fulfil their promise to the citizen.

CHAPTER 3: THEORETICAL FRAMEWORK

3.1 Introduction

As outlined in Chapter Two, literature on ICT development and implementation considers the development of new technology products as a linear or spiral process which is gradually refined over time (Boehm, 1987; Grady, 1997; Sibanda, 2012). By investigating the factors influencing the readiness of governments in developing *eGovernment* strategies and implementing initiatives thereof over time, I supported Orlikowski & Iacono's (2001) view and responded to their call to theorize the IT artifact.

The theory that underpins the research is discussed in this chapter. The chapter introduces the concept of Actor Network Theory (ANT) and discusses its applicability in the research study as a lens through which to understand and interpret the factors relating to and impacting *eGovernment* readiness in South Africa, and more specifically in the case study of the WCG. A theoretical framework, derived from the combination of literature reviewed and ANT, is then used to guide the design, collection and analysis of data. (The philosophical stance which is applied in this research is discussed in chapter four.)

By way of overview, in this research I selected to use Actor Network Theory (ANT) as a theoretical basis for the phenomena under investigation. The aim is to take advantage of the flexibility of ANT for gathering and analysing empirical information for the complex networks involved in the implementation of *eGovernment*. The benefit of ANT is its ability to explore the taken-for-granted nature of technology by tracing the human and non-human relations (Callon, 1986; Law & Callon, 1992) involved in the development and implementation of new technologies.

The use of ANT as an analytical framework to inform IS research is growing. It has sometimes been referred to as a theory that gives a voice to technological artifacts (Cordella & Maha, 2006). Since this study embraces the socio-technical research paradigm, the use of ANT as the theoretical foundation to explore the mutual interaction between people and ICT has been considered appropriate. ANT as a framework will be used as a lens to understand and interpret the phenomena under investigation. ANT has most commonly been used within the interpretive epistemology in the IS field and as such is seen as a powerful methodology to collect and analyze data that are interpreted through the meanings that people assign to them (Myers & Walsham, 1998).

According to Corkery, Land, and Bossuyt (1995), and Cordella and Maha (2006), ANT has become a method for data collection and analysis in interpretive research; hence it was used to trace the process that unfolded during the implementation of transformational eGovernment in the case study. ANT has revealed how actors align their interests through the moments of translation to form the network. The interactions between the actors while aligning their interests may reveal insights in their interactions during the process of eGovernment implementation. In line with the view of Stanforth (2006), and Corkery et al. (1995), ANT has been selected as well-established tool with the ability to explain, critique, develop.

ANT has been applied to information systems research and has improved understanding in otherwise difficult settings where interpretations of socio-politico-economic behaviour has been difficult to achieve. It has been seen as breaking the symbolic boundary between people and IT where IT and users are not defined outside their relationship in their relational networks (Walsham, 1997). Technology has often been considered as one of the components that determine the organisational structure (Orlikowski & Iacono, 2001). Even though that is the case, technology develops independently from social contexts but directly affects society (Cordella & Maha, 2006; Corkery et al., 1995).

ANT has the ability to overcome the understanding and interpretation of the important limitations of ICT as an enabler (Stanforth, 2006; Trusler, 2003). It has also been used by authors such as Ochara (2010) who investigated the irreversibility of an *eGovernment* project in Kenya; Lines (2005) who studied MIS and the Problem of Decoupling in *eGovernment* reforms; Gunawong & Gao (2010) who sought understanding of *eGovernment* failure of Thailand's Smart ID Card Project; Priyatma (2011) and Lamb (1987) who investigated strategy for *eGovernment* development; etc. With its toolbox of moments of translation, ANT alignment, inscription and irreversibility has been identified as better suited for the study of *eGovernment* readiness. The next section describes ANT and its relevance to this research.

3.2 Actor Network Theory

3.2.1 Overview

Attempts to understand the construction and transformation of networks made of heterogeneous elements relating to each other will be possible through the use of ANT (Baskin, 1993; Nijland, 2004). These heterogeneous elements are known as actors which could be human or non-human. The non-human elements could be policies, technology, government services, etc. Actors, whether human or non-human, have interests which they pursue. As applied to *eGovernment* readiness, it has been considered the appropriate alternative to analyse the process that leads to a possible stabilisation of a network. According to Latour (1987), IT has to be studied in action, hence the focus on the dynamics of the interactions rather than the stability of the network. ANT has been used as it provides theoretical and methodological underpinning for the study of the dynamic relationships at play during the *eGovernment* adoption process.

According to Tatnall & Gilding (1999), actors do not define themselves, but are defined by the relations to other actors in the network. Actors initiate action or can be acted upon.

In a heterogeneous network all actors are considered equal with no discrimination on either human or non-human actors (Baskin, 1993). Despite that, Schreiner (1994) states that the position of machines in the ANT is different to that of humans.

Machines are not possessed of an inherent momentum that allows them to pass through a neutral social medium (Latour, 1987). Instead they are continuously shaped and reshaped by the interplay of a range of heterogeneous forces within the networks (Stanforth, 2006). Machines are as much actors in the networks as humans. According to Callon & Latour (1981) and Corkery et al. (1995) an actor-network exists when human and non-human actors interact and produce some kind of result. Furthermore, the ANT sees the world as a network of related elements with no social order. Such a network is formed through moments of translation. The progression of these sociotechnical interactions and relationships are better understood through moments of translation.

3.2.2 Moments of Translation

3.2.2.1 Background

According to Callon (1986) and Corkery et al. (1995), the four moments of translation are as follows: (i) *problematization* – where the key actor makes himself indispensable to others by presenting the problem to them by compelling them to see things their way; (ii) *interessement* – after successful problematization, the key actor attempts to lock the others into place by intervening in interactions between other actors and defining the linkages between them; (iii) *enrolment* – the key actor defines the roles other actors need to play and the way in which they play; and (iv) *mobilisation* – the key actor acts as representative or spokesperson for the rest of the actors.

In their interplay within the actor network, actors negotiate their forces in a process of translation (Cordella & Maha, 2006). Translations are negotiations, intrigues, calculations, acts of persuasion, and violence.

There is close relation between power and translation. Power plays a key role in determining the success of translation. When one simply has power – *in potentia* – nothing happens and he is the same as the one with no power (Latour, 1986).

Latour (1986) and Corkery et al. (1995) believe that when the one with power exerts power –*in actu*– it is not him that performs the action but others. Thus:

“Power over something is a composition that is made by many – the primary mechanism – and attributed to one – the secondary mechanism” (Stanforth, 2006, p.9).

The amount of power is determined by the number of those who become members of the network (Stanforth, 2006). This means that the more actors that join the network, the more power that is exerted. The notion of power can be aligned with collective action even though it may not be known what holds collective action in place. In some cases key actors would seek to become indispensable. They do this by being able to define the problem and instituting a solution. As a consequence, they lock the other actors into their strategy. These actors become enrolled in the network and became the key actor’s spokespersons.

3.2.2.2 Problematisation

Problematisation is the first moment of translation where the focal actor makes himself indispensable to other actors by defining the nature of the problem and forcing them to accept a way forward. This moment of translation also involves motivating other actors in the network and suggesting that the problem would be resolved if they negotiated the obligatory passage point (OPP). This is the stage where a product or outcome of alliances between actors are described by identifying what they want (Callon, 1986). OPP is a process in which a focal actor convinces all other actors to accept the proposal put forward by the network. The focal actor during the OPP process shows an interest in all the actors who accept the proposed network (Callon, 1986; Trusler, 2003).

3.2.2.3 *Interessement*

Interessement, as the second moment of translation, is where the focal actor locks the others into place by imposing himself and defining the linkages between the others. Actors are locked into a position that they have been offered in the network (Gunawong & Ping, n.d.; Trusler, 2003). At this stage the actions by the focal actor aim to impose and stabilise the other actors' identity. Various strategies for different actors are used in these actions (Callon, 1986). If the interessement succeeds, then enrolment can take place.

3.2.2.4 *Enrolment*

Enrolment is where the principal actor defines the roles that the other actors will play and how they will relate with one another within the network. Enrolment as the third moment of translation, looks at strategies by which a focal actor attempts to define and interrelate the various roles that allow other actors to enrol (Gunawong & Ping, n.d.). This moment of translation involves negotiations, trials of strength, and tricks (Callon, 1986; Munyoka & Manzira, 2013). The success of enrolment is symbolised by the appearance of inscription. The inscription ensures the protection of some interests of the actors (Munyoka & Manzira; 2013 Sarker & Sidorova, 2006). In a nutshell, enrolment relates to acceptance from the other actors of the interests defined by a focal actor through the process of bargaining and making concessions.

3.2.2.5 *Mobilisation*

The principal actor uses his power on the passive agents and turns these passive agents into their representatives or spokespeople. The actors with less prescription are easily reconfigured into the interest of others who have stronger inscribed trajectories (Cordella & Maha, 2006). According to Stanforth (2007), it is the degree and form of mobilization of the networks and the way they are connected that determines the success of a project which is also applicable to eGovernment projects.

Mobilization is the final moment of translation, which relates to a set of manners utilised by a focal actor to ensure that all actors have legitimate speakers to represent them in the groups, and avoid betrayal by various collectives from the latter (Callon, 1986; Cloete, 2012; Sarker, Sarker, & Sidorova, 2006). Speakers or representatives are actors who speak for other actors (Walsham, 1997).

3.2.2.6 Irreversibility

To reach a state of stability of the network the notion of irreversibility must be established. This is a state at which the network has stabilised so much that the new *e*Government technology has become an essential part of the citizens' lives. Irreversibility can also be seen as a natural consequence of establishing actor networks. Whether inscriptions are followed or avoided depends on the strength of inscriptions. The stronger the inscriptions the more irreversible the network becomes (Mpazanje, 2009). The decision to follow or not to follow an inscription is dependent on its strength (Mähring, Holmström, Keil, & Montealegra, 2004; Ntetha & Mostert, 2011). Irreversibility is the state at which the development of the network has advanced so much that it becomes difficult to revert to the old ways. This is a state where the network is established and strengthened. It may take iterative inscriptions before the actor-network reaches an irreversible state (Mähring et al., 2004; Ntetha, 2010).

The ANT considers everything to be an actor, where elements of any kind hold together, such as humans, technological artefacts, organisations, institutions, etc. and does not differentiate between, or delegate a priority of any kind (Gunawong & Ping, n.d.). This is particularly important in the study of *e*Government where there are interactions between sociotechnical elements. The moments of translation ensure that non-human actors are given a voice as they have the ability to impact humans. ANT, in this study, has been used to describe and enlighten us to the role of technology in the process that shapes the relational outcome of the interplay between technology and people.

3.4 Critiques on ANT

There are a number of criticisms against the use of ANT in case study research. According to Walsham (1997), ANT fails to recognise and acknowledge social structures, lacks political analysis capability, and has limitations on capacity for explanations. Some do not agree with the equal status the ANT grants human and non-human actors; they feel humans have been reduced to objects, which, in their view, have no qualities such as emotions, which are important in human activity (Mutch, 2002).

Ascribing inscription capabilities to non-human actors is not acceptable to some critics. However, this criticism can be attributed to limited understanding of ANT. ANT does not claim equality of human beings and non-human artefacts but states that the heterogeneous elements could have equal influence in shaping actions; therefore, they need to have equal status and treatment (Monteiro, 2000).

Walsham (1997) criticises ANT for ignoring macro-social structures and concentrating only on micro-social structures. ANT does not ignore macro structures, but, indicates that the tools used for micro-level structures should be applicable to macro-level structures as well (Latour, 1999; Latour, 2005).

Walsham (1997) argues that ANT lacks insight concerning political viewpoints. He further states that additional political theories may be necessary in understanding case study research findings where ANT was used in data gathering and interpretation. It is argued that ANT is much more of a method for describing rather than explaining. According to the founders of ANT, the intention was never "to explain the actor's behaviours and reasons, but only to find the procedures which render actors able to negotiate their ways through one another's world-building activity" (Latour, 1999, p.20). It was meant to be a method of learning from the actors without imposing any a priori capacities on them.

3.5 ANT in IS Research

The complexity of the large number of interactions between humans and non-humans makes building an information system difficult (Tatnall, 2005). It is noted that:

"...IS is concerned with the ways people build and use computer-based systems to produce useful information and so has to deal with issues involving both people and machines" (Tatnall, 2005, p.42).

Since IS is neither merely a technical nor a social discipline, researchers face the problem of how to handle complexities that emerge from technology, humans and their interactions. Research in IS neither examines just the technological system, nor just the social system, or even the two systems side by side, but investigates the phenomena that emerge when the human and non-human components interact (Burger, 2010; Hanseth, Aanestad, & Berg, 2004; Tatnall, 2005). Even though ANT asserts that the hybrid entities containing both human and non-human elements exists, it handles the divide between human and non-human elements by denying that purely technical or purely social relations do exist (Tatnall, 2005; Tatnall & Gilding, 1999).

ANT has potential to provide IS research with very powerful tools to help overcome poor understanding of the IT artifact (Boehm, 1987; Orlikowski & Iacono, 2001). The tools include a broad range of ANT concepts that have the capability to describe the relationships between the human and non-human elements of the network. For ANT to be able to make a significant contribution to IS research, it should be able to help theorise the IT artifact (Hanseth et al., 2004) or be able to give a better understanding of the interaction between the human and non-human elements of the network. It is important for IS researchers to better understand the social context of the development, implementation and use of IS. Failure to demonstrate that understanding may mean no contribution has been made to the IS field.

Hanseth et al. (2004) asserts that a number of theories used in IS research totally ignore technology, which means that ANT offers some unique and important contributions to IS. ANT offers a rich understanding of the technology seen in a social context. Understanding technology in a social context means understanding the relationship between technological artifact and technology-in-use. Technology-in-use actually shapes or produces technology artifact. This is the exact relationship that ANT should help IS researchers analyse and understand. Since ANT assumes that all networks are heterogeneous, it assumes that there are no networks that consist of only humans or only of technological components, but all networks contain elements of both.

It is common for IS researchers to focus on the technical aspects of an innovation (Callon, 1986; Tatnall & Gilding, 1999), but ANT concentrates on issues relating to network formation, tracing the human and non-human alliances and networks built up by the actors involved (Law & Callon, 1992; Tatnall, 2005). It zooms in on the negotiations that configure the network by the enrolment of both human and non-human elements. Interactions and associations between actors and the formation of networks are important. The process of implementing a computer-based system involves a complex set of interactions.

What is key about ANT is to study the construction of things that are normally taken for granted (Hanseth et al., 2004), such as the relationships between the human and the non-human and between design of technology and use thereof. ANT uncovers the negotiation processes that results in networks being created and transformed. This is of great significance and contribution to the IS field. On the other hand, ANT draws on the strengths of qualitative research. In so doing, it provides a powerful framework for understanding IS innovation.

ANT is useful for studies of information systems in situations where interactions of the social, technological and political are regarded as particularly important (Tatnall & Gilding, 1999). It enables the researcher to develop a holistic narrative that relies on the equality of human and non-human elements in investigating the contributions of each of these elements. ANT offers something useful to IS research, particularly in areas like *eGovernment* and more attention should be given to the use of this approach.

3.6 ANT Perspective of *eGovernment*

ANT has been used as a lens in developing countries to develop informatics research. The study conducted by Heeks (2003), in which he investigates the relationship between the width of the reality gap and failure/success of *eGovernment* projects, the claims of technological determinism are negated (Cordella & Maha, 2006; Stanforth, 2006). Stanforth (2006) further states that in this investigation there is emphasis on understanding the human dimensions of the intended organisational change. This means the human actors are more privileged than those that are non-human. This raises questions on the postulated relationship between technology and humans. As a consequence Stanforth (2006) posits that information systems literature does not address core theoretical concepts aimed at influencing management behaviour. Literature has ignored analysis of causality between ICTs and societal effects.

Walsham (1997) and Muganda (2009) have used ANT to assess irreversibility of an *eGovernment* project in Kenya. This study involved a combination of independent research: technology transfer, information technology conceptualization, and impacts. Ochara (2009) and Orlikowski & Iacono (2001) theorised the expected overall impacts of *eGovernment* to influence how policy makers and implementers in developing countries conceptualised *eGovernment*. The Kenyan government has been involved in ICT projects in different departments (Ochara, 2010). This has been seen as an instrument for achieving economic prosperity in Kenya (Waema & Mitullah, 2007). The key objective of the investigation by Ochara (2009) and Stanforth (2006) was to uncover the process followed in implementing *eGovernment*.

The initial analysis used ANT for understanding the processes of building, growing, and stabilising the network during the development process of an *eGovernment* initiative and later interpreted the process of implementation by analysing the irreversibility. The latter process of analysing the irreversibility was to determine the strength of irreversibility of the *eGovernment* project. In the proposed study the researcher identified factors that would potentially contribute to the strength of irreversibility.

An Actor-network can move through time and space without changing its properties and such a network is set to have reached a state of irreversibility, implying that the network has been strengthened (Lines, 2005; Walsham, 1997). Similar to the study by Ochara (2009), this research study intends, among other things, to identify the relationship between the level of *eGovernment* readiness and the strength of irreversibility.

In his research conducted in Kenya, Mugunda (2009) focused on the *eGovernment* artefact in the context of a developing country. He was drawn to the ANT due to what it offers in terms of concepts and language used to describe how networks are created, strengthened and even weakened (Mugunda, 2009; Priyatma, 2011). Using case studies, two constructs were considered: the nature of *eGovernment* conceptualisation, as well as the nature of stakeholder interactions. The study focused on identifying human and non-human elements as well as bringing about understanding of the nature of interactions of these elements. Since there are a number of stakeholders involved in *eGovernment* initiatives, it would not be appropriate to assume intentions of actors but to investigate them, and this is where the ANT comes in handy.

According to Stanforth (2006) and Nijland (2004), ANT contributes to *eGovernment* research in developing countries by presenting previous ideas on organisational change in order to move from the current to the future system into a new shape. This means that ANT contributes towards transformational *eGovernment* by indicating the sociotechnical priorities that need to be addressed in successful *eGovernment* projects.

ANT simplifies complex results while also making them more convincing instead of simply listing them. It creates a platform for further argument and debate. ANT is thus an appropriate tool to analyse the dynamics of power relations in developing countries involved in *eGovernment* projects.

For the purpose of this study it is important to understand the processes in which ICTs are developed and how they influence societies. *eGovernment* can be considered as both a strategy and a project. As a project, *eGovernment* can be driven by corporate strategy, enterprise architecture strategy, and government interventions in terms of legislation, or service delivery obligation. Whether *eGovernment* is a strategy or project, the aspect that drives it will be uncovered at the problematisation stage of the development of the actor network.

As a project there will be project objectives and deliverables. Success of projects means successful completion of the project deliverables and meeting of the objectives. On the other hand projects are seen as vehicles that drive strategies towards their success. Therefore the project deliverables and strategies must be aligned. In order to gain understanding of the factors that influence the design and deployment in *eGovernment* projects, it is useful to draw on ideas from ANT (Heeks, 2004). ANT will help tease out ways in which an *eGovernment* project with different actors creates and maintains networks of aligned interests. These networks can be seen as driving forces within *eGovernment* projects.

3.6.1 Problematisation

Problematisation is the first moment of translation in the lifecycle of an actor network, in which the focal actor frames the problem in his own terms (Barkar & Peszynski, 2010). He identifies other actors who may also be affected by the problem. In the context of *eGovernment*, the focal actor identifies actors who may be interested in solving

problems associated with service delivery in the WCG. The identification of these problems may be aligned to the strategy that has been developed by the WCG.

The actors identified by the focal actor may be human, which may include managers, directors, clerks, developers, etc; or non-human, which may include technology, infrastructure, processes, contracts, etc. Even though each of the actors may have their own interest, the focal actor draws a broad strategy to address problems that have been identified.

One of the strategies the focal actor uses to overcome problems is the establishment of the OPP. Through the OPP the focal actor promises all the relevant actors that they can achieve their different goals. This is an agreement that all actors have to subscribe to in order to become official actors in the network. Among the things the OPP also achieves is the ability to manage the relationships and integrating all actors. Through the OPP all actors can achieve a shared focus in successfully pursuing their interests.

In the context of *e*Government projects, problematisation begins by defining project objectives and selection of actors (Gunawong & Gao, 2010; Tatnall & Gilding, 1999). Interest groups and project deliverables need to be aligned to the total project goals and objectives. The focal actor then sets-up an OPP in order to align the interests of different actors (Callon, 1986; Nijland, 2004).

3.6.2 *Interessement*

As the second moment of translation, *interessement* involves convincing the other actors that the interests defined by the focal actor are consistent with theirs (Callon, 1991). This means that this moment of translation is concerned with other actors becoming interested in a proposed solution. In the context of *e*Government in the WCG, the focal actor will convince the other actors that their proposed planned action is in line with their interests, which is also in line with the *e*Government strategy of the WCG.

It is the duty of the focal actor to ensure that all other actors see benefit in pursuing *eGovernment*. The decisions the focal actor makes should consider all factors that will influence implementation of the *eGovernment* project.

3.6.3 Enrolment

At this stage of the network, the roles of each actor in the newly created network are identified. Each actor is supported in carrying out the activities that lead to the successful implementation of the *eGovernment* project. In the *eGovernment* context these roles may include a number of activities.

3.7 The concept of Institutionalisation

3.7.1 Introduction

According to Hanseth, Aanestad, & Berg (2004) institutionalisation is the process by which social processes and obligations come to take on a rule-like status in social thought and action. The process of institutionalisation involves embedding a concept, a social role, a particular value or mode of behaviour within an organisation, social system, or society as a whole (Humes & Reinhard, 2007). In the context of *eGovernment* research, institutionalisation is a process of committing an individual and group to a particular way of doing things. Institutionalisation also applies to the creation and organisation of particular bodies responsible for overseeing or implementing *eGovernment* technology.

3.7.2 Institutionalization in eGovernment Context

The development of *eGovernment* systems can be considered as a response to pressure from governments to deliver services for citizens from anywhere. Once *eGovernment* systems have been developed and implemented, institutionalised practices then become part of the institutional context of the organization and serve to legitimise other practices. Accordingly, institutionalisation should not be regarded as the mere translation of such scripts into practical actions.

Organisational structures and individual practices should be decoupled and regarded as stages of institutionalisation. An *eGovernment* system can be regarded as highly institutionalised if it presents collective actions and uniform processes (Jepperson, 1991).

The other side of the same coin is deinstitutionalisation, which has not been explored much (Dacin & Dacin, 2008; Oliver, 1992). According to Scott (2001), deinstitutionalisation is the process which weakens institutionalisation by pulling in the opposite direction. It openly challenges an existing institution. According to Oliver (1992), political, functional and social pressures are possible antecedents that would explain deinstitutionalisation. In the context of *eGovernment* it would be expected that when new and automated processes are brought in by the implementation of *eGovernment*, they would displace the existing and manual processes. This would be accompanied by new policies which would present a fertile environment for the new technology to be institutionalised and thereby deinstitutionalising the manual processes. It is believed that old and institutionalised practices are difficult to extinguish completely to create a completely new environment (Dacin & Dacin, 2008). Rather, these are at least phased out slowly. Change can rather be considered as a drift that moves in time and space along the interactions of a multitude of actors with common interest. If actors have not reached a common point of interest, institutionalisation will not be possible as there will be forces that will be pulling in opposite directions with no common goal.

When the concept of institutionalisation is observed in conjunction with ANT via a phenomenon of translation which incorporates human and non-human actors, institutionalisation assists in successfully bonding together a network of actors that defines the nature of the *eGovernment* practices being studied. ANT leads researchers to address in a number of ways the development and implementation of innovations with controversies that accompany them, thereby acknowledging power struggles between the new and the old structures.

The process of translating an innovation implies that interactions are created between actors with aligned interests in order to pursue certain goals rather than others in the change process (Chua, 1995). These are the alliances that form actor-networks composed of both human and non-human actors. Non-human actors are given a voice through spokespersons who contribute to the building of the network of aligned interests. Networks become stronger as they incorporate human and non-human actors. Finally, this construction is considered successful if technologies, in the case of *eGovernment* innovations, acquire a solid and sound appearance, i.e. they become institutionalised, which will not subsequently be questioned for at least some time (Latour & Woolgar, 1979).

3.8 Theoretical Framework

eGovernment literature from developing and developed countries has been consulted. From such literature the key pre-conditions for *eGovernment* implementation has been identified (*See Table 5*).

Table 5: Actors and level of orientation (Heeks, 2002)

Readiness Factor	Description	ANT
Process Infrastructure	Management systems, data standards, records and work processes	OPP
Legal Infrastructure	Laws and regulations	Problematization
Institutional Infrastructure	To act as a focus for awareness and to act as a means for facilitation of <i>eGovernment</i>	Interessement
Human Infrastructure	Attitudes, knowledge and skills required to initiate, implement and sustain <i>eGovernment</i> initiatives	Problematization
Leadership and Strategic Thinking	Leaders with vision who make it happen, senior officials who feel willing or able to champion <i>eGovernment</i>	Interessement
Technological Infrastructure	Telecommunications infrastructure	OPP

The trend that emerged from the literature is that there is a strong relationship between the level of eGovernment readiness and the success (or even the improvement) of the implementation of eGovernment projects. This implies that the higher the level of readiness the more stable the actor network becomes. The level of readiness is seen as a contributing factor towards the irreversibility of the actor network. From the theoretical framework in Figure 6 below, it can be deduced that eGovernment implementations with higher levels of readiness will enable networks of aligned interests to reach strong levels of irreversibility. This means that the higher the eGovernment readiness, the more successful the implementation will be.

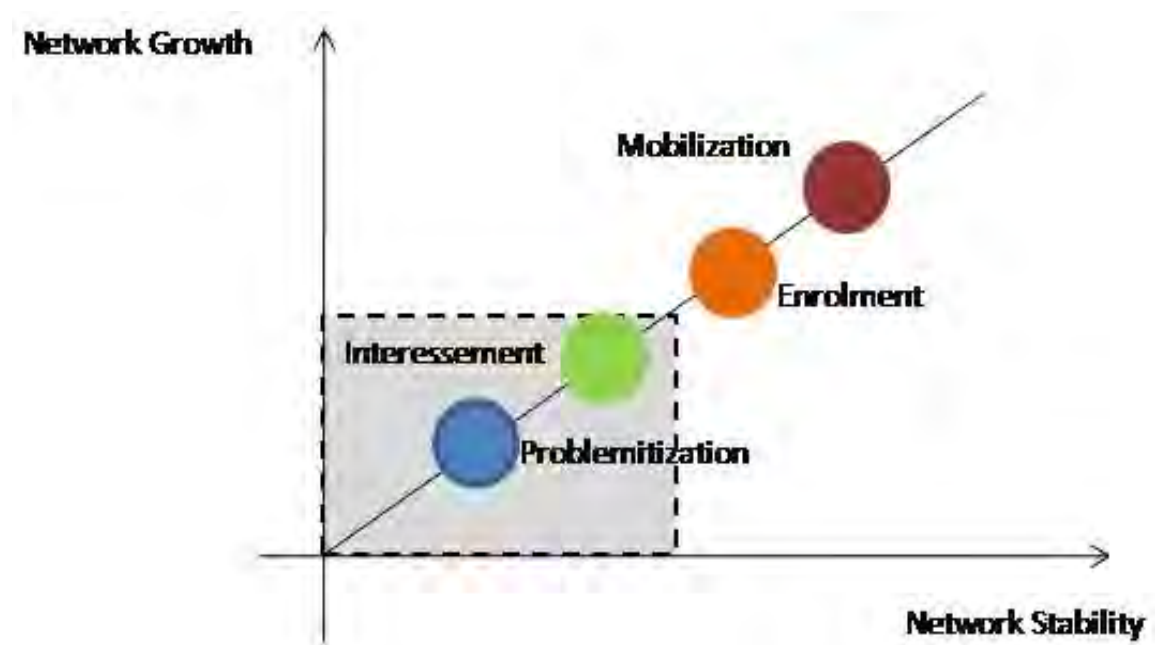


Figure 6: The Actor Network Conceptualised (Twum-Darko, 2011:196 - 199)

Table 5 seeks to deepen the understanding of pre-conditions that come to play during eGovernment implementation. There is close alignment between the Table 5 and the research questions in section 1.2.3. The theoretical framework, which will be further refined in section 3.9, will be used to tease out the research questions while at the same time determining factors that contribute to the strengthening of the network of aligned interests.

A data collection instrument was drawn using the conceptual framework (*Figure 6*) derived from the theoretical framework (*ANT*) as a guide. Furthermore, the literature review also contributed to the design of the data collection instrument. *Figure 6* is used to explain what emerges from the relationships between the actors in the actor network and the extent of the irreversibility of the aligned interest towards the stability of the network.

Given the literature reviewed in Chapter Two and the theoretical framework described above, *Figure 6* theorises the intended solution diagrammatically, as an approach in understanding and interpreting the phenomenon under investigation – namely, *eGovernment* readiness in South Africa. It was theorised that as the actors' aligned interest in the network went through the moments of translation as in *Figure 6*, the stronger the alignment of interests in the *eGovernment* project initiation, the higher the level of *eGovernment* readiness and the higher the implementation success due to the irreversibility state of the aligned interests of the actors.

3.9 Analysis of Theoretical Framework

Bengtson (2006) states that theorisation is the initial step in the process of developing an account of the *how* and the *why* leading to *what* can be observed in our research. Such attempts are not final solutions. They are rough drafts, to be revised and revised again in the course of our investigations and in response to further empirical research findings (Llewelyn, 2003). According to Llewelyn (2003) and Callon(1986), theory is an ordered set of assertions about a generic behaviour assumed to hold throughout a significantly broad range of instances.

It can be deduced from the definitions that a theory is built upon more than hypotheses and evidence and contains reasoning and logical connections based on the hypotheses and evidence. Construction of good theories should be the goal of all scientists.

The value of qualitative empirical research lies in theorisation of actions, events, processes, and structures within organisations (Cordella & Maha, 2006; Llewelyn, 2003). This implies that theorisation adds value to qualitative research as it offers greater understanding of the empirical issues under discussion. Llewelyn (2003) asserts that appropriate theorisation provides fuller explanations of organisational structures and processes than those held by organisation members.

Researchers have a challenge to clarify existing conceptual tools and to construct new ones by following criteria of utility rather than the truth (Mouzelis, 1995). Alvesson and Skoëldberg (2000) and Latour (1986) understand the rationale for a project to bring abstract philosophical theories, concepts and ideas down to a level where they become relevant and manageable in a qualitative methodological context. It therefore becomes important to understand how theory supports empirical research.

Stanforth (2006) and Sutton & Staw (1995) assert that references to theory developed in prior work are not in themselves theory but contribute by setting the environment for new conceptual argument and theory development. A good theory covers situations that intuitively would not apply to it (Swedberg, 2010). Swedberg (2010) states that it is important for scientists to master the skill of theorising rather than simply presenting existing theories. This implies that it is important to focus on the verb “theorising” rather than the end product “theory”. Theorising has to do with thinking about the social relationships that interact with the phenomena being studied. According to Swedberg (2010) and Callon (1986), theorising begins with description, proceeds to creation of concepts, and ends with explanations.

A theoretical framework which is the outcome of the theorisation process becomes an explicitly defined framework with which details of the case and the data can be assessed (Alasuutari, 1996; Callon, 1986). From a theoretical framework, a general viewpoint is proposed to be applicable to a number of cases.

IS research results need to present detailed and compelling arguments. Even though some of the organisational theory is based on data, empirical evidence plays the role of confirming, revising, or discrediting existing theory and in guiding the development of new theories (Sutton & Staw, 1995).

Given the concepts of ANT and the *eGovernment* projects, one is able to use theorisation as a lens (Gunawong & Ping, n.d.; Heeks & Bailur, 2007; Heeks & Santos, 2009; Lines, 2005; Montazemi, Pittaway, & Qahri-saremi, 2010; Ochara, 2010; Priyatma, 2011; Stanforth, 2006) through which to understand and interpret the challenges of the *eGovernment* projects in developing countries (Callon, 1986; Dada, 2006; Heeks, 2003; Gunawong & Gao, 2010). Almarabeh & AbuAli (2010) and Gunawong & Ping (n.d.) believe the underlying potential of *eGovernment* initiatives to achieve the envisaged outcomes is through access to a better understanding of the challenges faced by governments.

For the purpose of this study it is important to understand the processes in which *eGovernment* projects are developed and how they influence societies. In order to gain understanding of the factors that influence the implementation of *eGovernment* projects, it was useful to draw on concepts of ANT (Heeks, 2004). ANT is used to theorise how *eGovernment* projects with different actors created and maintained networks of aligned interests. These networks were seen as the driving forces within *eGovernment* projects. ANT sees actors within a network as not merely human beings but also non-humans, which includes technological artefacts such as the *eGovernment* systems (e.g., the predictors in Table 5) themselves (Heeks, 2004).

As outlined in Table 5, (i) *legal infrastructure* which relates to laws and regulations, and (ii) *human infrastructure* which relates to attitudes, knowledge and skills required to initiate, implement and sustain *eGovernment* initiatives; should drive the definition of problematisation.

Thus, with problematisation being the initial stage of the network, the rest of the actors need to align their interests with that of the focal actor before any progress to the next stage of the network can be made. This means that *eGovernment* projects are initiated by the need to change the legal environment to ensure that the human infrastructure is adequately capable to operate in the *eGovernment* project environment. Parallel to legal infrastructure, people's mind-sets must be geared towards the *eGovernment* projects. According to Gunawong & Ping (n.d.) problematisation as the first moment of translation, relates to the process of a focal actor striving to become indispensable to the other actors by defining the problem, motivating them in the network, and suggesting that the problem would be resolved if the actors negotiated the OPP.

OPP is the means which the focal actor uses to problematise, by convincing all other actors to accept the proposal of a network. It can also be seen as a process in which a focal actor shows an interest in all the actors who accept the proposed network (Callon, 1986). OPP is a commitment of actors to the actor network.

As outlined in Table 5 (i) *infrastructure* which relates to management systems, data standards, records and work processes, and (ii) *technological infrastructure* which is aligned with telecommunications as the narrow end of a funnel; forces the actors to converge on a particular action. These drive and define the OPP. These are commitments in the sense that they impact on the processes of the current system and public monies invested in developing the technological infrastructure. Inadequate alterations to the current systems and lack of investment in technological infrastructure may mean that the project may not progress to the next stage. This also implies that the network does progress to the next level. This is in line with the assertion by Ngulube (2007) and Sarker & Sidorova (2006), who posit that technological infrastructure is a widely recognisable and identifiable component driving implementation of *eGovernment*. He further states that the lack of telecommunication infrastructure has seriously restricted the implementation of *eGovernment*.

The success of OPP would compel project stakeholders to see the project to the irreversibility stage (Cordella & Maha, 2006; Ochara, 2010). On the other hand they must be equipped with the knowledge and skills required for implementing and sustaining *eGovernment* projects. This would be considered part of the OPP to help align interest. If the right skills are not attained there will be no alignment of interests.

The definition of *Interessement* in Table 5, is driven by (i) *institutional infrastructure* which acts as a focus for awareness and acts as a means for facilitation in *eGovernment*; and (ii) *leadership and strategic thinking* which state the requirement for leaders with vision who make *eGovernment* projects a success, senior officials who are willing or able to champion *eGovernment* projects is the next level of the actor network. Failure to negotiate *interessement* strategies would result in aborted *eGovernment* projects. This implies that for actors to commit themselves to *eGovernment* projects, it is important that institutional infrastructure and leadership and strategic thinking be in place. This further implies that for *eGovernment* projects to kick-off there needs to be awareness, and for that to be achieved there is a need for leadership with strategy. In the PMI (2010) it is stated that project leadership should understand stakeholder needs before engaging on a project. *Interessement* which is driven by leadership and institutional infrastructure, can be considered as the glue that holds all other components together in an *eGovernment* project. If that glue does not bring the other components together in a coordinated manner, the *eGovernment* project is bound to fail.

The successful problematisation, the passing through the OPP, and successful *interessement* stages of the network mean that the network has gained substantial growth that is nearly stable (as indicated by the shaded area in Figure 6). This paves the way for convergence of interests (enrolment and mobilisation) towards greater stability of the network. An Actor-network such as the network to implement an *eGovernment* project, can move through time and space without changing its properties and such a network is set to have reached a state of irreversibility, implying that the network has been strengthened (Callon, 1986; Walsham, 1997).

According to Stanforth (2006) and Sarker & Sidorova (2006), ANT contributes to eGovernment research in developing countries by presenting previous ideas on organisational change in order to move from the current to the future system in a new shape. This means that the ANT contributes towards transformational eGovernment by indicating the sociotechnical priorities that need to be addressed in order to increase chances of successful eGovernment projects. ANT simplifies complex results while also making them more convincing instead of simply listing them. Thus using ANT to theorise creates a platform for further argument and debate.

3.10 Conceptual Framework

It is expected that eGovernment implementation goes through several stages (*See Figure 7*), namely, project conceptualisation, stakeholder buy-in, project committees and project championship. As these stages develop, there is increased project acceptance and the project is institutionalised. This means that the eGovernment project does not only focus on providing the required functionality but also on the extent to which these eGovernment systems are used by the intended audience.

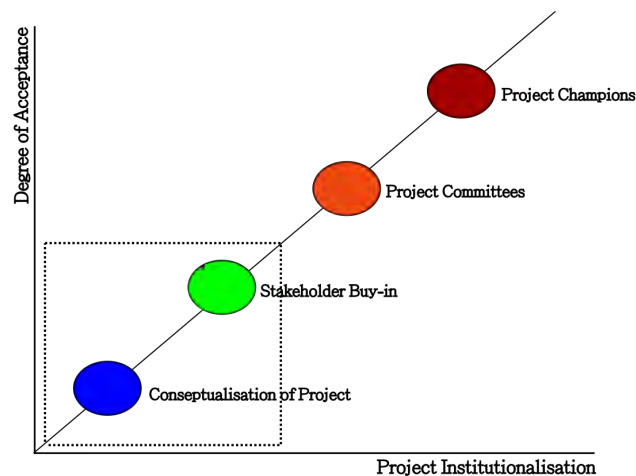


Figure 7: Problem Conceptualisation (Source: Twum-Darko, 2011, pp.196-199)

3.11 Chapter Summary

This chapter focused on the theoretical framework of this study. Since this study investigated the development of a network between human and non-human elements, Actor Network Theory (ANT) was used as a lens to understand and interpret the factors influencing *eGovernment* implementation. Many good reasons were given for why this was an appropriate theoretical framework to use to explain the phenomenon under investigation. ANT is considered as a theory that gives a voice to technological artefacts. As a theoretical framework, ANT has been used to break symbolic boundaries between people and technology. Various authors are considered to have made substantial contributions towards the use of ANT in IS research. In this chapter, moments of translation of problematisation, intersement, enrolment, mobilisation and the concept of irreversibility, have been described in detail. This chapter further gave a perspective of ANT in *eGovernment*.

In Chapter Four, the research approach and stance will be explained.

CHAPTER 4: RESEARCH APPROACH

4.1 Introduction

This chapter outlines the approach followed in conducting the research. It begins by explaining the ontology of the research and the epistemology, which is interpretive. In so doing, interpretive research use in IS and in ANT is discussed. Thereafter, the reasons why case study research has been followed, and why the WCG has been used as a case, is elaborated. This chapter gives a view of the case, its population, history of service delivery and location within the greater South Africa. A perspective of the development of eGovernment in the Western Cape Province is also covered. Three projects from three different government departments in WCG have been studied. Details of the various methods of data collection, including interview, are discussed. It is explained that eGovernment project documentation and policy documents have been used as instruments of triangulation. The chapter ends by addressing ethical issues.

Research is based on underlying assumptions about what constitutes valid research and the appropriate methods of conducting such research (Twum-Darko, 2011). The philosophical stance underpinning the proposed study is critical, which implies a subjective epistemology and ontological belief that reality is socially constructed.

4.2 Ontology

Ontology deals with the form and nature of reality and what can be known about it. It can also be seen as concerning the questioning of the nature of reality and truth. According to Orlikowski & Baroudi (1991), ontological beliefs uncover the essence of the phenomena being investigated. This is done by emphasising beliefs about human rationality and beliefs about social relations. The view as to whether the real world and its phenomena are objective and independent of human conception, as opposed to a more subjective view which only exists by humans creating and recreating reality, have been dominant.

In this research ANT was used and it accentuates that reality is constructed by the interplay of more than one participant and this reality emerges outside the mind of any individual (Cordella & Maha, 2006; Mpazanje, 2009). Unlike interpretivism where reality is created in the mind, ANT assumes that reality emerges 'out there'. What holds in this research is that the ontology of ANT which considers reality as emerging through the interplay of various actors (both human and non-human), is where reality becomes 'real'; this happens when actors interact. The use of the ANT ontology gave rise to an opportunity for this research to focus on these alternative natures of technology, people and their relationships.

4.3 Epistemology

Epistemology relates to the posture of the researcher while acquiring knowledge. It is concerned with an examination of the conditions, possibilities, nature and limits of human knowledge (Danermark, Ekstrom, Jakobsen, & Karlsson, 2002; Mähring, Holmström, Keil, & Montealegra, 2004). It therefore becomes critical for these conditions to be met in order to construct and evaluate knowledge. Epistemology, in a broader sense, refers to the branch of philosophy that addresses knowledge, its nature and sources, and particularly the acquisition of knowledge (Hirschheim, 1985).

Epistemological assumptions of ontological theories are important in order to be able to critically evaluate boundaries, scope and limits of these theories. IS research examines more than just the technological system or just the social system. It investigates the phenomena that emerges when the two interact (Recker & Niehaves, 2008). It therefore becomes important for researchers and other readers to fully comprehend the research approach and the perspective taken by the researcher during the investigation.

Case study research which this research adopts can be positivist, interpretive, or critical as shown in Figure 8.

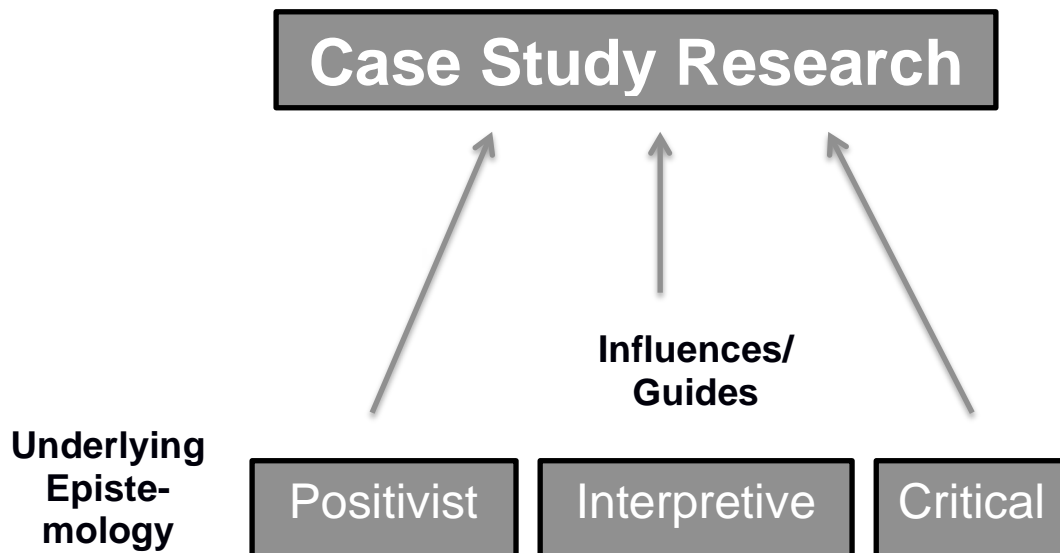


Figure 8 : Underlying philosophical assumptions (Myers, 1997)

Positivist studies generally attempt to test theory in an attempt to increase the predictive understanding of phenomena (Myers, 1997). In addition, IS research can be classified as positivist if there was evidence of formal propositions, quantifiable measures of variables, hypothesis testing, and the drawing of inferences about a phenomenon from the sample to a stated population.

Interpretive research on the other hand starts out with the assumption that access to reality is only through social constructions and shared meanings. The stance adopted by this research was interpretive. Interpretive research attempts to understand phenomena of interest through the meanings that actors assign to them (Klein & Myers, 1999; Tatnall, 2005). Social reality is seen as historically constituted and produced and reproduced by people (Myers, 1997). Although people can consciously act to change their social and economic circumstances, their ability to do so is constrained by various forms of social, cultural and political domination.

4.4 Interpretive Research in Information Systems

Researchers following a case study methodology face a number of challenges in making their argument. Andrade (2009) and Yin (2003) caution case study researchers to be careful of arguments that downgrade the academic disciplines by lacking necessary precision, objectivity, and rigour. This warning applies more to interpretive researchers who focus at theory building through inductive thinking process. It would be more appropriate for interpretive researchers aiming at building theory to adapt the case study guidelines (Andrade, 2009; Tatnall, 2005).

Interpretive research assumes that reality is socially constructed and the researcher becomes the vehicle by which this reality is revealed. Reality can only be accessed through social constructions such as language, consciousness and shared meanings (Tatnall & Gilding, 1999). Interpretivism provides a deep insight into the complex world of real-life experiences from the point of view of those who live it (Schwandt, 1994).

4.5 ANT and Interpretive Research

Some researchers have argued that the use of ANT as a lens in interpretive research contradicts ANT's fundamental ontological stances (Cordella & Shaikh, 2003; Orlikowski & Iacono, 2001). The intention in this research is to display the power of ANT concepts as an appropriate analytical device for understanding the *e*Government implementation. In interpretive case study research ANT provides a lens through which to review the research setting. ANT also provides a language for discussing the dynamic events in which the research is located.

ANT has guided this research epistemologically to study the process of *e*Government implementation as based on a complex actor-network. In this research, emphasis is on how technology and related components, as well as other actors, have played a role in influencing actions of a variety of actors. Implementation of *e*Government should be seen as based on a negotiation process which involves a heterogeneous and socio-technical actor-network.

The interpretation of the eGovernment implementation process will not be based only on my interpretations of the interviews, but also on interpretations of the roles of the various social and technical actors involved. This will enable understanding of how the various social actor interests and intentions are reflected in non-human components. ANT will also reveal important aspects of eGovernment implementation by focusing on how technology influences human behaviour (Hanseth et al., 2004; Monteiro, 2000). Furthermore, the use of ANT for sense-making and as a device for interpreting will improve understanding in IS interpretive studies. The use of ANT will also encourage the opening of black boxes and closing of others.

4.6 Hermeneutics

Hermeneutics is the art of interpreting, and can be treated as both an underlying philosophy and a specific mode of analysis (Bleicher, 1980). As a philosophical approach to human understanding, it provides the philosophical grounding for interpretivism. As a mode of analysis, it suggests a way of understanding textual data. This study is concerned with using hermeneutics as a specific mode of analysis which will also be the essence of this discussion.

Hermeneutics is primarily concerned with the meaning of a text, which the researcher comes to understand through oral or written text (Hanseth et al., 2004; Myers, 1997). Hermeneutics is concerned with the basic question of: "What is the meaning of this text?" (Radnitzky, 1970; Tatnall & Gilding, 1999). Interpretation is an attempt to make clear, to make sense of an object of study which in some way is confused, incomplete, cloudy, seemingly contradictory or unclear. The aim of interpretation is to uncover an underlying sense. The idea of a hermeneutic circle refers to the dialectic between the understanding of the text as a whole and the interpretation of its parts (Gadamer, 1976). As is noted:

"The movement of understanding is constantly from the whole to the part and back to the whole" (Gadamer, 1976, p.171).

Hermeneutics is a circular relationship between the whole and its parts in which the whole is envisaged to become explicit in understanding the parts, and they in turn also determine the understanding of the whole. Interpretation entails deciphering the hidden meaning in the apparent meaning. It unfolds the levels of meaning implied in the literal meaning (Ricoeur, 1974).

Hermeneutic analysis, for which ANT can be considered an appropriate tool, is used in this study. Hermeneutics in interpretivism attempts to make sense of the text-analogue. In eGovernment projects, organisations, people, and even technology can have confused, incomplete, cloudy and contradictory views of issues. The hermeneutical analysis tries to make sense of the relationship between people, the organisation, and information technology by engaging the hermeneutic spiral.

4.7 Methodology

Methodology is concerned with identifying the appropriate methods the researcher should use in finding out what he believes can be known. This research was driven by the interpretive paradigm because the aim of the research is to understand and interpret the phenomenon, which is a social reality.

In this research, a case study strategy has been followed in the identification of the elements (human and nonhuman stakeholders), as well as decipher the nature of interaction between the various elements. The rationale for this selection is that a case study can hone in on understanding the dynamics of contemporary and social occurrences (Darke, Shanks, & Broadbent, 1998; Tatnall & Gilding, 1999). The emphasis of the case study is to understand factors that relate to, and impact eGovernment readiness in South Africa. Case study methods are known for their ability to allow for holistic and in-depth research of complex cases with a limited existing body of knowledge. They have the potential of providing descriptions of phenomena and for theory generation and testing (Darke et al., 1998).

Generalisation in this research was drawn from a single case study, namely the Western Cape Government (WCG) (previously known as the Provincial Government of the Western Cape (PGWC)) Three different and unique projects were used as units of analysis within the WCG case. There are general misunderstandings and beliefs that one cannot generalise on the basis of a single case study. This misconception has been corrected by Flyvbjerg (2006) who argues that generalisation from a single case study can be possible depending on the case one is speaking of and how it is selected.

According to Orlikowski & Baroudi (1991), case study research is the most commonly used qualitative approach in information systems. Several years ago a survey of published MIS articles in selected IS journals revealed 96% of their sample adopted a positivist perspective, while the remainder were interpretive (Stanforth, 2006; Tatnall & Gilding, 1999). Since the early 1990s, qualitative research has gained popularity and is now used much more extensively in investigating information systems (Stanforth, 2006; Tatnall & Gilding, 1999).

4.8 The Case - The context of South Africa

4.8.1 Introduction

Up until 1994, South Africa was under the rule of the apartheid government which promoted division and inequality amongst citizens. This situation has put the country in a situation where there is a huge gap between the rich and the poor. This gap can be observed, as there are massive disparities in development, service delivery and wealth between suburbs, townships and rural areas. As a result of apartheid, South Africa faces a massive backlog in service delivery (Nathan, 2013). According to Nathan (2013), 203 out of 284 South African municipalities are unable to provide sanitation to 40% of their residents. This means that in the majority of municipal areas, people do not have flush toilets.

Nathan (2013) and Ochara (2010) further states that 887 329 people still use the bucket system and 5 million people, or 10.5% of the population, have no access to sanitation at all. This makes it perfectly understandable why poor people take to the streets in protest against poor service delivery.

The post-apartheid promise made by the African National Congress (ANC) of an extensive roll-out of service delivery has been undermined. Even though some headway has been made in rolling out services since 1994, thousands of communities living in rural areas and townships continue to receive inadequate services. The ability and willingness of the South African government to provide adequate service delivery to all is not only dependant on having the 'right' political party or right skills, nor is it simply a question of having good policies, or the adequate administrative means or technical capacity to implement them (Nathan, 2013; Ochara, 2010), but it is a matter of ensuring that the economy serves the citizens (Ochara, 2010). There is a need to move away from rigidity where structures are inflexible, towards creating a fluid process (Lindner, 2012).

The challenge the government of the day faces, among other things, is to address the inequalities that were created by the apartheid government. In order to succeed there needs to be massive paradigm shifts and a concerted collection of ideas, collaborative, cooperative creation of innovative visions for a better future, and consensus-based planning for action on a large scale (Lindner, 2012; Waema & Mitullah, 2007). The people of South Africa need to work together to establish new methods of doing things that will result in solutions which work for all.

According to Lindner (2012) and Ochara (2010), for the system in South Africa to function well there is a need for social rationality and economic rationality. Platforms for dialogue and enhancing human dignity and equality need to be created. Apartheid could not be dignified by being kinder to each other but the entire system needed to be reshaped (Lindner, 2012; Padayachee & Desai, 2013).

eGovernment thus has the potential to go beyond just improving service delivery to revamp the entire system, hence allow transformational eGovernment.

4.9 The Western Cape Province

4.9.1 Background of the Province ⁸

The Western Cape Province has a population of 5 287 863 which accounts for 10.4% of the total South African population on 129 370 km² of land. The majority of the people in the Western Cape speak Afrikaans, with isiXhosa and English being the other main languages. When compared to the unemployment rate of 23.2%, the Western Cape has 22.2%, which is the lowest in South Africa. The Province of the Eastern Cape and the Northern Cape borders the Province of the Western Cape. Figure 9 provides an illustration:



Figure 9: Map of South Africa

⁸ http://www.westerncape.gov.za/your_gov/70#overview

ICT is one of the fastest-growing sectors in the Western Cape province, and operations are being expanded to other provinces. The constitution of the Western Cape was adopted in 1998 and is documented in Afrikaans, English and isiXhosa. The provincial constitution corresponds with the national constitution.

It is within the realm of responsibilities as set out in the Constitution of South Africa for the Western Cape Provincial Parliament to create laws for the province. It is the vision of the Western Cape Government to be an open opportunity society for all. Its mission is to promote freedom and opportunity for all the people of the province through policies and practices that strengthen the Constitution, while creating the conditions for sustainable economic and employment growth. Alleviating poverty by providing a welfare safety net for those unable to provide for themselves is at the top of the agenda of this province. Safety and up-skilling of every person is one of the important missions of this province. Clean, efficient, cost-effective, transparent and responsive public administrations are some of the ethics that the Western Cape Government prides itself in.

The specific mandate of the Western Cape Province is as follows:

1. Increase economic empowerment for all citizens of the Western Cape
2. Reduce poverty through promoting opportunities for all
3. Promote rural development
4. Efficient and effective infrastructure
5. Sustainable human settlements
6. Improve individual and household capacity to respond to opportunity
7. Improve efficiency and effectiveness in health, education, well-being and safety
8. Sustainable resource use through greater spatial integration
9. Effective public and non-motorized transport
10. Responsive and effective governance.

It is clear from the mandate of the Western Cape Province that *e*Government has a major role to play. Without *e*Government being in place it would be almost impossible to achieve the objectives listed above.

4.9.2. The 2014 Strategy of the Provincial Government of the Western Cape⁹

The strategy of the Western Cape Provincial Government is to a large extent informed by the lessons learnt from past service delivery challenges. The WCG's key strategic objective of "Building the best run regional government in the world" seeks to lay a foundation for building an efficient, transparent, responsive and corruption-free government that delivers cost-effective services to its citizens.

This provincial government adopts a transversal management system in order to achieve systems integration in their service delivery programmes. Their strategic objectives cut across traditional line functions. When developing the 2014 strategy, financial constraints were taken into consideration. This necessitated the WCG to carefully select, interrogate and revise the deliverables contained in the Annual Performance Plan.

Some of the key deliverables contained in the Annual Performance plan are:

1. Introduction of more refined information management systems such as business intelligence (BI), enterprise project management (EPM), integrated financial management system (IFMS) and enterprise content management (ECM). In the ECM project, major strides have been made in building a safer knowledge management and preservation system.
2. Microsoft migration project implementation. This project is aimed at increasing service delivery demands on the centre for innovation. This project will continue concurrently with the broadband project.

⁹ <http://www.westerncape.gov.za>

3. Finalisation of the international relations strategy. This focuses on tourism, trade and investment promotion in Africa and Brazil, Russia, India and China (BRICS) countries.
4. Compliance with both the Promotion of Access to Information Act (PAIA) and Promotion of Administration Justice Act (PAJA) will be given attention.

In viewing the strategic objectives of the WCG, it becomes apparent that IT is placed high in the priority list. This is evident by the progress made in the implementation of the ECM system, and the broadband project. It is not surprising that this province is considered to be leading in the implementation of eGovernment systems in South Africa. The strategic objectives of the WCG have been developed with the citizen at the centre. Leadership and transparency are considered imperative in the process of delivering the strategic objectives of the WCG.

4.9.3 Units of Analysis

4.9.3.1 Selection of the case

As stated earlier, the objective of this thesis is to investigate the factors relating to, and impacting eGovernment in South Africa. It has also been indicated earlier that the WCG would be used for this study. This entailed a detailed study of how governments can better prepare for the implementation of eGovernment systems in a way that will increase chances of such projects succeeding. This focus has led to the adoption of an interpretive stance, which seeks to uncover the truth by understanding the phenomena in their real life context (Walsham, 1995).

The selection of the case, therefore, was based on the fact that the WCG has implemented a wide range of projects that are actually used by the public to access government services. Three projects (*see unit of analysis below*) were considered flagship projects, which led to the WCG being referred to as the leading province in terms of eGovernment systems implementation (Matavire et al., 2010).

The criteria for selecting these projects were further based on their impact on the citizen's ability to access government services via ICT with limited human intervention. In addition to being the leading province in the country in terms of eGovernment implementation, according to media, Cape Town as a city is considered amongst the best-run cities not only in Africa but in the world. The other reason for selecting the WCG for the case study is convenience. The researcher lives in Cape Town and selecting the WCG as a case study made access to government offices easy. Even though collecting data in the WCG was convenient, it was not easy. The difficulty related to access to information and securing of interviews.

4.9.3.2 Units of Analysis

This research is based on data collected from three WCG eGovernment Projects as alluded to in the previous paragraph: These are as follows:

Department of the Premier: This department provides legal and corporate services and co-ordinates some of the provincial affairs for the Premier, Director-General and other departments in the WCG. The EG4C project in the Department of the Premier focused on developing a portal which would provide the citizens with online access to government information.

Department of Health: The department of health has a comprehensive package of health services for the people of the province. Among others, they offer emergency health services, mental and women's health services, baby and child and rehabilitation services.

Department of Education: The Western Cape Department of Education is responsible for public schooling in the province from grades one to twelve. They provide specialized education services and subsidise and support grade R education. This department further provides further education and training (FET) and adult basic education and training (ABET).

4.9.3.3 Sample population

This research uses ANT for data collection and its interpretation thereof. This implies that the researcher did not predefine who would be included in the network, but rather traced the network until the respondents were exhausted, the respondents began to repeat the same things, or there was enough information to conduct the interpretation. In the case of all three projects that were studied, the respondents who were involved in the projects were exhausted. The Table 6 below shows the number of people who were interviewed together with their designations

Table 6: Unit of Analysis

Project type	Management			Team Leaders (TL)	Analysts (BA)	Developer (Dv)	Users	Total
	Senior (SR)	Middle (MM)	Content (CM)					
EG4C	1	1	1	2	1	2	1	9
BIMS	2	1	1	1	1	-	1	7
ERS	1	2	1	2	1	1	1	9

4.9.3.4 Coding

Coding involves organising and sorting data in order to label, compile and organise data. More generally, coding is considered a technique that is used to develop a story line. Coding can be done in a number of ways but for the purpose of this research a technique of assigning a code to the projects and designations was used. The table 7 below shows the number of people who were interviewed together with their designations.

Table 7: Project and designation codes

Designation		Project and designation code		
		eGovernment for Consumer	Bursary Information Management System	Educator Recruitment System
		EG4C	BIMS	ERS
Designations	Senior Manager	SR1	SR2	SR3
	Middle Manager	MM1	MM2	MM3
	Content Manager	CM1	CM2	CM3
	Team Leader	TL1	TL2	TL3
	Web Designer	WD1	WD2	WD3
	Business Analyst	BA1	BA2	BA3
	Developers	DV1	DV2	DV3
	Content Researcher	CR1	CR2	CR3

4.9.4 Data collection techniques

During the data collection in interpretive research, interdependence between the researcher and his informants exists. They are mutually interactive and construct a collaborative account of perceived reality. The researcher remains open to new ideas throughout the study. This approach is also consistent with the interpretivist belief of people's ability to adapt and that no one can gain prior knowledge of time and context bound social realities (Ochara, 2010). The goal of interpretivist research is to understand and interpret human behaviour; therefore, it is important to understand motives, meanings, reasons and other subjective experiences which are time and context bound (Mugunda, 2009). To fulfil the goal of an interpretivist researcher it is important to use data collection techniques that are congruent with the goal.

There are various data collection techniques that were identified which are used during case study research. Mugunda (2009) mentions archival records, observations, review of documentation, and interviews as some of the techniques. According to Walsham (2006) interviews have been used the most in interpretive studies as a key way of accessing the interpretations of informants in the field. In the case of this study, interviews were supplemented by other forms of field data collection as Stanforth (2006) suggests in an interpretive studies. Internal documents were made available and they included strategic plans and meeting proceedings and policy documents.

A decision of whom to interview and how many interviews to conduct was a challenge. According to Heeks (2004) the unit of analysis and the objective of the case study should guide the researcher on the sample size. In the table 8 below, some common sampling strategies are outlined:

Table 8: Sampling strategies for case study research (Patton, 2002)

Sampling Strategy	Purpose
Maximum Variation	Documents diverse variations and identifies important common patterns
Homogenous	Focuses, reduces, simplifies; facilitates group interviews.
Snowball or Chain	Identifies cases of interest from people who know people who know what cases are information rich.
Purposeful	Select information rich cases strategically and purposefully. Selected type and number of cases selected depends on study objective and resources.
Opportunistic or Emergent	Following new ideas during fieldwork and taking advantage of the unexpected flexibility

From the techniques outlined by Patton (2002) in Table 8, the research adopted a snowball or chain sampling strategy. This is due to the fact that even though ANT requires the tracing of the network, the research must have a starting point.

This is in line with the identification of cases of interest from people who know people and know what cases are information rich. To some extent some elements of the opportunistic or emergent strategy have been applied in the sense that in tracing the network, the research was compelled to follow new leads during time of data collection.

The type of interview used to engage interviewees was semi-structured interviews because Gunawong and Gao (2010) argued that semi-structured interviews allow for questions to be pre-determined but not limited to those questions. This interview type creates the opportunity to probe for clarity and more information. Thus in this research, the semi-structured interviews as a technique gave the respondents the freedom in responding and also allowed for the opportunity to obtain all the information required. This type of interview assisted in tracing the network of interactions, alliances, power structures and relationships that existed. Moreover, documents such as minutes, policy documents, and programmes of action were also consulted for data collection.

Before each interview began, consent was sought from the participant. Participants were assured confidentiality regarding their identity. The aims and the objectives of the study and the importance of interviewees' participation in the study were explained. Interviews were conducted in either English or Afrikaans with no more than two hours spent on each participant. The questions of the interviews were both open and close-ended, where close-ended questions required short phrases while the open-ended ones required long answers. During the open-ended questions, attempt was made to record respondents' reflections, opinions and feelings where non-verbal and non-communicable information were observed. Notes were taken during interviews and voice recordings taken with permission from the participants. A number of ANT studies such as Callon (1986) and Stanforth (2006) have followed this approach and it has proved to be adequate.

4.9.5 Managing and recording data

Permission to record interviews was requested from each of the interviewees before the start of each interview. The advantage of recording is that it gives a more accurate record of what was said when compared with the taking of notes during the interview (Callon, 1991). Recording interviews makes it possible to return to the transcript later for alternative forms of analysis; on the other hand, it is useful for selecting direct quotes when writing up. The use of a recording device enables the researcher to concentrate on engaging with the informants. The downside of recording interviews is that informants may be less open or less truthful in their responses. On the other hand, they do not capture the tacit, non-verbal elements of an interview, which may be crucial experiences for the researcher. People's views and attitudes are not judged solely on what they say but also on the non-verbal behaviour. In this study, the data was captured in the form of audio recordings and was immediately transcribed while the interviews are still fresh in the mind. This eliminated the problem of forgetting and ambiguity in the utterances of the respondents. All data in all forms was filed appropriately and kept confidential.

4.9.6 Data analysis strategies

The data obtained from interviews, documents and policies and the drafts thereof were analysed using ANT. Non-public documents and statements were protected, as per the ethics considered. ANT was used to look at understanding and uncovering the interactions, alliances, power structures and relationships that existed between and amongst the actors that were part of the implementation of *eGovernment* in WCG.

4.9.7 The research instrument

Research studies have been undertaken to understand factors relating to and impacting *eGovernment* readiness. In this research, semistructured interviews in case studies were considered the most appropriate research instrument since the research sought to study social phenomena. The study sought to probe and understand *eGovernment* readiness factors, and interactions among actors in such *eGovernment* projects (Cicmil, 2006; Linde & Linderoth, 2006).

The selection of semi-structured interviews assisted in directing interviews as opposed to non-structured interviews. This approach also provided participants with enough freedom to express themselves fully (Saunders, Lewis & Thornhill, 2003). The interview schedule had seven sections (*see Annexure 3*): These are as follows:

- Section A Sought to capture demographics of participants. This section provided a friendly atmosphere to establish some relationship between the interviewer and the interviewee to allow for a good progress during interactions;
- Section B Captured project details;
- Section C Gave details of how the project was conceived, and also probed into the participants' understanding of the project:
- Section D Provided details of commitment of stakeholders to the project;
- Section E Encouraged informants to discuss details around creation of awareness of the project;
- Section F Provided information on the buy-in, ownership and team roles
- Section G Addressed the project outcome and post-implementation activities.

Table 9 summarises what is contained in each section, the ANT alignment, and the detail as per the interview schedule.

Table 9: Data source and the research questions addressed

No	Section	ANT Alignment	Detail
1.	A	Actors	Demographic of participants
2.	B	Problematization	Project details
3.	C	Problematization	Project conception
4.	D	OPP	Commitment of stakeholders to the project
5.	E	Interestment	Creation of awareness of the project
6.	F	Enrolment	Buy-in, ownership and team roles
7.	G	Irreversibility	Project outcome and post-implementation activity

Interviewees were prompted to discuss how they were introduced to the project, how the project network was established and strengthened, and how their own objectives were met by participating in the project. The interviewees were also encouraged to discuss how they dealt with the challenges they encountered. Emphasis was placed on issues relating to the formation and strengthening of the network, tracing and investigating interactions between both human and non-human actors (Tatnall & Gilding, 1999).

4.10 Ethical Issues

As indicated under data collection, an attempt was made to request permission to carry out interviews from all participants of eGovernment implementation in the WCG that form the actor network. Special permission was also sought from WCG senior management in order to gain access to all documents required for data collection. Consent was sought from all interviewees, without any coercion, to go through the interviewing process. The notion of confidentiality and anonymity were maintained. The interviewees were reassured about the purpose and about confidentiality at the start of each interview. Meaning of contents of the interviews was explained and identities of interviewees were kept confidential. The proposed research interview schedule went through a standard approval process by the Ethics Committee of the Faculty of Commerce of the University of Cape Town, which scrutinised all the research questions, interview questions, guidelines etc.

4.11 Introduction of the Projects

As stated above, this research has been conducted using the WCG as the case study. There eGovernment projects from the WCG have been selected and are briefly introduced in the following subsections:

4.11.1 eGovernment for Consumer (EG4C)

The focus of the EG4C project was to on servicing and giving information access to the public via the online facilities. There was also a need to improve communication between the WCG departments and the members of the public.

The focus of this project was to ensure that the best possible portal was developed to provide members of the public easy access to information about service provided by the WCG. The project was triggered by the fact that citizens did not have a clear understanding of the services provided by the WCG. This also meant that they did not know where to go to get the services they are entitled to. All this information would be provided by the portal.

4.11.2 Bursary Information Management System (BIMS)

The objective of this project was to implement an online-based bursary application system. The Department of Education was faced with a problem of a large number of bursary applications which were difficult to administer. The issues with the bursaries were experienced during the handling of manual applications, and during the administration of the applicants who were granted these bursaries. It was difficult to track monies that were paid to bursars and there same issue occurred when the repayments were due. The bursary management system was developed to enable applicants to apply online and also provide ease of administration of the process.

4.11.3 Educator Recruitment System (ERS)

The educator recruitment system (ERS) was similar to the BIMS project. The key objective was to provide an online handling of the applications of educators for jobs. This project was triggered by the difficulty that prevailed during the assessment of applications from educators. There were numerous applications which took very long to process manually. The Department of Education would spend monies paying its employees overtime for processing paper-based applications.

The objective of the system was to introduce an online system which would automate and speed up the process of recruiting educators.

4.12 Chapter Summary

This chapter has provided the underlying assumptions about what constitutes valid research. The philosophical stance adopted by this study is interpretive, which implies that reality is socially constructed. The research is qualitative and has been conducted using the case study of three eGovernment projects in the Western Cape Government. The type of research instruments used was the semi-structured questionnaire, which was used as a guide in collecting data. Various data collection techniques have been used, such as project documentation, interviews, etc. The details of how data was managed and recorded, and the strategies that were followed in analysing data, have formed part of the discussion in this chapter. The chapter ended with an outline of some of the ethical steps taken to address ethics related matters.

Chapter Five outlines the findings and provides interpretation of the results.

CHAPTER 5: FINDINGS AND INTERPRETATION

5.1 Introduction

This study highlighted the concern of high eGovernment failure rates, and aimed to explore at what stage a government is ready to implement a successful eGovernment initiative. This led to the investigation of the factors influencing the readiness of governments in developing and implementing eGovernment strategies. The study also sought to determine the criteria for improving eGovernment initiatives in South Africa using the WCG as a case study. Its main research question was, **How can governments determine their readiness to implement eGovernment projects?** Six sub-questions, adapted from Heeks (2002), were also generated. These were: (1) How did the WCG ensure technical infrastructure was ready for eGovernment implementation? (2) How did the preparation of eGovernment implementation necessitate changes to department legal infrastructure? (3) What adjustments were made to the processes in preparation for the eGovernment implementation? (4) How was human capital prepared for implementing and post implementation of eGovernment initiatives? (5) How did the WCG address enterprise architecture related issues in preparation for eGovernment implementation? and (6) How did e-leadership affect the implementation of eGovernment?

The previous chapter focused on the background of WCG, the departments used in the research, the projects used, and the collection of the data. This chapter will report on the analysis, findings and interpretation of the outcome of the qualitative interviews conducted. The analysis and interpretation is based on the research questions posed to the respondents, themes that have emerged from the review of literature and any other themes that may emerge, as well as the concepts of the study's theoretical framework, namely Actor Network Theory (ANT).

5.2 Process of Analysis

The process of analysis follows that recommended by Devlin (2006). The following steps were followed in the processing and analysing the outcome of the interviews:

First, the responses were condensed into a table, arranged according to the questions using an Excel spreadsheet. Each interview question was typed into a separate line and each response was labelled according to the project code and respondent code (*See Coding Table 6*). The coding table shows the coding of all projects and respondents accordingly. The coding process involved reading the responses one-by-one and line-by-line, highlighting relevant words, phrases or sentences. The list constituted a set of organized, raw data, known as the data set.

Second, after browsing through the transcripts which were organized in a spreadsheet, the researcher then noted any first impressions and trends the data may have revealed. When categories were developed inductively, then explanations, grounded in the data, were developed. As suggested by Berg (2007), the use of excerpts to document the interpretation made by the researcher, were used.

Third, responses which could not be linked to a specific question but were relevant to the research were coded and categorised.

Finally, in analysing the data, reference was consistently made to both the literature and the theoretical framework.

As was highlighted in Chapter Three, ANT was the theoretical framework. ANT focuses on the moments of translation which can be summarized as follows: (1) *Problematization* - which is the first moment of translation where the focal actor makes himself indispensable to others by defining the nature of the problem; (2) *Interessement* - which deals with the focal actor locking other actors into place by imposing himself and defining the linkages between others; and lastly (3) *Enrollment* - where the focal actor defines the roles to be played by other actors in the network.

As further concept of ANT to be addressed is irreversibility, which is the state where eGovernment has become an essential part of the citizen's life. These concepts and the related findings, will now be discussed.

5.3 Problematisation

Problematisation, as the first moment of translation, is where the focal actor identifies his or her interests by framing the problem that is the shared interest, which is defined as the OPP. In the case of this research it would be eGovernment. Problems confronting governments would not be known unless government officials share their views on what they perceive as problems that should be addressed by eGovernment. It is imperative for the focal actor to successfully canvas for the support of other actors to the extent that they're willing to change and align their interests with those of the focal actor. In this case of eGovernment, government officials who would play the roles of focal actor must fully understand the problems confronting governments.

What has been gathered from the interviews is that the problems come from the fact that there are no proper eGovernment systems in place that would enable the public and business to independently access information and services provided by the government.

5.3.1 How the project was introduced: Focal Actor Identification

The network aligned interests were initiated by the focal actor who in the context of this research identified the problem. In the case of the EG4C project, the focal actor was the CIO who communicated the need for a centralised portal which would provide citizens with information relating to services provided by the WCG. This was announced in a strategic planning session and incorporated in the strategic plan.

“It was communicated to me in the meeting by the CIO” (Comment by SRI).

The information relating to the existence of the EG4C project cascaded down to the lower levels of the organisation. The SR1 informed his staff and the evidence thereof is as follows:

"I was informed by the director in a meeting which is the same time I was seconded to the project and also presented the scope" (Comment by MMI).

"There was communication which came from various managers" (Comment by WD1).

"My manager informed me about the project" (Comment by USR1).

In all the comments above, it is evident that positional power played a role. This power comes from a person's formal title, role or position. It is the power that is associated with position in the organisational structure and one who possess this power commands the respect of others who are willing to follow. With the approach of using positional power there would be little resistance to buy-in from the other actors.

Some of the project team members were recruited specifically for the project. This made it easy for the focal actor to impose his interests on the new employees. This is due to the fact that new employees are not accustomed to how things are done in the organisation but all they will know is the new envisaged way of doing things. On the other hand the new employees had fresh ideas which were not clouded by the processes and the politics of the department. This would have a positive influence on the outcome of the project.

"I heard they were looking for a Content Manager specifically for this project, I applied and was appointed" (Comment by CM1).

"I was specifically recruited for the project. I was called and requested to apply for the position" (Comment by TL1).

With regards to the BIMS and the ERS projects, the SR2 and SR3 acted as the focal actors. There was a similar concern in both situations where there was a problem relating to the management of paper-based information. The problem started at the point where applicants had to complete paper-based applications. This was a cumbersome process which exposed the process to numerous errors either by applicants or by the administrators. The problem was extended beyond the process of applications, it also became a problem to track the applications.

In terms of identification of the focal actor there were only three respondents, one from each project, who were able to respond to questions relating to the focal actor. Only the SR1, SR2 and SR3 were able to identify the focal actor. This may be due the fact that they were the only respondents who sat in the strategic planning sessions. From these responses it can be deduced that the forums where the need for the project came from, appointed these actors as focal actors who would be able to sell the idea to other actors. This may be due to their power which will be discussed under mobilisation below.

The commonality about the focal actors in all three projects is that they are all in roles of translating strategies into action. They are the link between top management and the lower levels of management. They are the ones who would understand how to negotiate buy-in from lower level staff in the organisation. On the other hand the focal actor such as the ones in these projects would be able to negotiate with the upper level management on behalf of the lower level employees. This makes them appropriate to play the role of focal actor in the network.

5.3.2 Identification of the Problem

eGovernment projects begin by defining project objectives and the selection of actors. The same has been the case with the projects in this study. As already indicated in Chapter Three, problematisation is where the focal actor defines the nature of the problem, encouraging the other actors to align their interests. The ANT as an underpinning theory has been used as a lens through which to identify how the actors in the network interacted to produce eGovernment systems that were to alleviate problems associated with service delivery. The focal actors have identified their interests by framing the problem. In the case of the EG4C project, the interest of the focal actor was the need for the citizen to have access to information relating to services offered by WCG. This interest was in line with the mandate and strategy of the WCG as discussed in Chapter 5.

“The problem was that citizens did not really know what services the government offered. They did not have access to information. Actually, my focus is on giving information access to the public via the online and needed to improve communication” (Comment by SM1).

“The focus of this project is about providing easy access to information for our citizens. It’s all about making life easy for the citizens” (Comment by MM1).

“There wasn't a single portal where citizens could come and get a consolidated view of government. This portal was designed and presented in a way that made sense to the citizen rather than from government's perspective. Another objective was to make information accessible in terms of language where it is not using government lingo but presenting it in plain language so that the average citizen can read and understand it” (Comment by TL1).

“The problem was lack of access to government information” (Comment by DVI, CMI).

"A portal was identified as the best method of addressing the problems giving citizens access to information" Comment by WD1).

In the case of the BIMS and ERS project, the common problem was that of having to deal with paper-based applications. It became a problem to handle and even track these applications using manual systems. Basically the departments could not handle the amount of work associated with the handling of applications and were compelled to come up with solutions. The departments were faced with a problem of not meeting deadlines and escalating cost over time.

“So, the first two vacancies were horrendous for me when I started in this department. We received 17 000 manual applications per vacancy list which the team had to work through and capture on the database. So it took us two to three weeks to confirm how many applications we received. We used to close at four o’ clock in the afternoon. We had long queues so people would be trying to run around to apply on time or post them. The teachers are at school till three o’ clock so they had an hour to apply. The department incurred high over-time costs in order to meet deadlines which were often missed” (Comment by SR3).

“The initial objectives were to do the application process, to take the paper base and turn it to an online application” (Comment by SR2, MM2, BA2, DV2).

5.3.3 Legal Infrastructure

With reference to the theoretical framework discussed in Chapter Three, it is important to note that laws, policies and regulations are considered at problematisation stage of the formulation of the network. This was also the case with the EG4C and ERS projects. The evidence in these projects respectively is as follows:

“It was important to actually understand the kind of information which could be published, by law.” (Comment by CMI, BA1).

“We needed to look at the laws and regulations because for the educators we work under the Employment of Educators Act and there is a collective agreement with the unions and the Employees Labour Relations Council (LRC). The management team went through the resolutions to check if we would not be contriving and going against any policy by implementing such a project. Again, at the end of the electronic application form the applicant had to sign declaration by accepting a checkbox.” (Comment by SM3).

“We consider legal infrastructure to play a pivotal role in the success of eGovernment projects. It would not do just to bring systems to the citizens when they still have to print paper, scan and send or even hand deliver documents because the law does not accept electronic signatures. We devised a way which amounts to electronic signature to ensure that there was some of commitment by the applicants.” (Comment by SR2).

The responses above show that legal infrastructure is an important factor to consider for successful eGovernment implementation.

In line with Heeks (1998) legal barriers, where there is inadequate legal infrastructure to deal with electronic commerce, trans-border data flows, electronic record keeping, and other issues of information age government can have negative effects on eGovernment projects. An example is that some governments do not accept electronic signatures. These are the kinds of areas that need to be considered in conjunction with the security implications that accompany them.

5.3.4 Human Infrastructure

Reference to human infrastructure has been made in the theoretical framework discussed in Chapter Three. Most of the respondents made mention of some form of inadequacy relating to the human infrastructure. This either relates to the skill and knowledge levels, attitudes of people, or required number of skills not obtainable. This formed a point of discussion at very early stages of the project. The consideration was that for the eGovernment to proceed, the human infrastructure was needed. The evidence obtained from the respondents relating to the shortage of skills is as follows:

“The government invested a lot of resources in providing accredited training for people in the project.” (Comment by SR1).

“The plan was to use different sets of skills from different departments to assist us, even though they were in short supply”. (Comment by MM1).

“The project had to work with the limited resources which it had. They could have provided more human resources.” (Comment by MM2, SR3).

“We had limited human resources and some of us didn’t work well under pressure and they complained.” (Comment by MM2).

One area relating to human infrastructure that was mentioned by the respondents is the attitudes that human resources displayed regarding the eGovernment projects. Some had positive attitudes and some negative. The respondents attributed the attitudes to the level of understanding of what the project was to achieve. Where they understood what the project goals were, their attitudes were positive. Where they did not understand the project goals, the opposite applied. These is one of the respondent's comments:

“I don't think everybody necessarily understood the intention and it was seen as an extra layer of work and even asked questions like, 'is this project really necessary', but yes, I think those issues were resolved, people understood. But in the early days it was new and scary, that is why there were negative attitudes and some resistance.” (Comment by SR1).

In some cases human resources were concerned about how the eGovernment project was going to affect their jobs.

“Is this going to affect my job?” (Comment by MM1).

Furthermore, a situation arose where the human resources understood what the goals of the project were. They also knew how they would benefit from the project. The senior managers of project 3 and middle managers of project 2 responded as follows:

“They showed appreciation and they were happy because it increased their productivity and it gave them a positive impact when it was implemented.” (Comment by SR3, MM2).

Clearly, given the responses above, there was a common understanding of what problems led to the EG4C, BIMs and ERS projects.

Even though the problems were known to exist, they were not addressed until the focal actors shared their views on what they perceived as problems that would require government information sharing and online application respectively. It is evident from the above interview responses that focal actors of the three projects were successful in getting the actors to understand the existence of the problems and how the problems could be resolved. After this, the challenge was to rally the support of the actors to the extent that they are willing to align their interests with those of the focal actor. In line with Meyer and Rowan (1977), it is imperative that the focal actor fully understands what the actors are going through that would warrant action in order to frame a problem successfully. By the same token, he must communicate a solution to those problems. In the case of the projects in this study, the actors have been able to identify the problems and more importantly, as discussed in Chapter Three, even though the focal actors showed interest in resolving the problems, the resolutions were aligned to the strategy which was developed by the WCG.

With regards to the EG4C project, some WCG departments were against the project. They did not see the need to have their websites redesigned as they were working well. The problem is that, even in those websites that worked well, there was not a standardised way of presenting government information to the public. There was still a need to redesign those websites. To arrive at a point where there was no resistance, focal actors had to establish the OPP. In line with Nicolas, Yves and Vassili (2009), the focal actor sets-up an OPP in order to align the interests of different actors. In the case of EG4C, there was a mandate that all WCG departments had to have their websites redesigned and the design was to be undertaken by the Department of the Premier. This forced all WCG departments to comply and become part of the project, and they were compelled to cooperate with the Department of the Premier in making arrangements for a centralised portal. By accepting to become part of the network, actors were, in essence, also accepting that there would be changes in process infrastructure to accommodate the interests of the focal actor. This is evident in a number of comments:

“Not all departments were eager but, unfortunately we’ve got to sort of push from the bottom but you’ve got to push from the top as well, and the people will resist change and that needs to be dealt with.” (Comments by SR1).

“Some were keen and some were not. It is always like that. Some didn’t even want the project, like the Department of Education thought we were irritating them. They felt they already had their own website and they were doing a lot of stuff with it and they were doing quite innovative stuff like giving school results through their website and they asked why should they become part of you when we have got our own momentum” (Comment by CM1).

“Some, like the Department of Education, were not really keen. Their argument was that they have been in government for ages and you are telling us what we must do.” (Comment by TL1).

Technological infrastructure was considered a key aspect in all projects. This was a topic which was addressed at early stages of the project. The evidence is as follows:

“Technological infrastructure was very important for us, otherwise there would be no project, and new infrastructure was procured in preparation for this project.” (Comment by MM1).

“Major infrastructure was provided by the State Information Technology Agency (SITA) and was not good enough. Today the content management systems are lighter and do not need so much bandwidth and there is more bandwidth these days. Infrastructure was attended as one of the priorities. Better ICT infrastructure was necessary.” (Comment by CM1).

Another constraint was that very few citizens had access to the internet. There were connectivity problems and we knew that most citizens did not have access to internet.” (Comment by CMI).

5.3.5 Changes Made in Preparation for the Project

Implementation of eGovernment projects is not just a matter of automating the manual process. Extensive process infrastructures re-work needs to take place in preparation for the envisaged change. In the case of the ERS project they had to reengineer their processes to be able to work under the new conditions.

“We had to change the processes as well to change from paper to online application. Phase two was the School Governing Body (SGB) process; they had access to the online short listing or print them out.” (Comment by SR3).

Even though it was not mentioned in all projects, there was a tacit compulsion to accept that there would be changes in the process infrastructure. There cannot be a change from paper-based applications to electronic online applications without the change in process. There had to be changes in management systems, data standards and work processes.

There was also clear process infrastructure rework that was done in the case of the ERS project:

“We standardised the curriculum vitae (CV) and our intention was that we knew where to look for key things on the CV because of the volume of the CV’s we received.” (Comments by SR3).

Again, in the case of EG4C project, there were inter-departmental agreements that were entered into by the Department of the Premier:

5.3.6 Obligatory Passage Point (OPP)

The response made by MM1 below can be looked at as an action which was important in formalising and strengthening the OPP. Passing through the OPP means the focal actor can be able to manage the relationships and integrate all actors.

“Inter-departmental agreements were entered into because they were compelled to work with us.” (Comments by MM1).

For the BIMS and the ERS projects, the shared interests were the actual OPP. Even though there was some resistance from the School Governing Body (SGB) in the case of the ERS project, with regards to the BIMS and the ERS projects there were existing problems which everybody was aware of and wanted them solved.

“There was some form of resistance from the School Governing Body (SGB). They do the recruitment processes for the educators.” (Comment by SM3).

The common problem of having to deal with paper applications, which took long to process, compelled all actors to align their interests with those of the focal actor. Through the OPP all actors could achieve shared focus in pursuing their interests.

In all the stated cases there was a challenge of aligning the interests of the focal actor with those of other actors in the network. The focal actor had to introduce an OPP which is, according to Callon (1986), where the outcome of alliances between actors are described by what they want. The OPP forces all actors to accept the proposal put forward by the network. At this stage the focal actor shows interest in all actors who have complied with the requirements of the OPP.

“There were agreements signed with all departments to cooperate, with SITA for infrastructure and with the service provider maintenance and support.” (Comment by SR1, TL1).

The following comment shows that in order for someone to be considered for a government bursary, they were compelled to make use of the system that was developed for their convenience. This is what the respondents said:

"There was communication in website, newspapers and radio informing the public that we will no longer accept paper applications. Provision was made for those who did not have access to the internet at their home to visit community centres in order to gain access to the internet."
(Comments by SR2)

"A circular was sent to all schools and communities informing them that from a specific date only electronic applications would be accepted. The circular was accompanied by the procedure on how to apply. There was also assistance provided at community centres." (Comment by SR3).

In essence, the above comments have to do with the change in the process. It should be noted that the use of the system meant that the citizens understood the problems of having to travel to the offices where services were provided, and standing in queues would be eliminated. As intimated by Callon (1986) the statements above show that the focal actor would only be interested in actors who would pass through the OPP and thereby accept the proposed network.

It is important to note what was alluded to by the respondents. The fact that there was agreement to proceed with the project after having considered the infrastructure meant that technology infrastructure was an OPP which any eGovernment should pass through.

These were alluded to by a number of respondents. In the case of all three projects their technological infrastructure was already in place, which meant there was no need to conduct any work in that regard. This was consciously looked into and assessed and found to be adequate. If this was considered inadequate or inappropriate for the eGovernment systems they wanted to implement, it would have been an OPP which all departments would need to pass through in order to proceed with the eGovernment projects.

5.3.7 Influences, Associations and Interactions

The kinds of influences, associations and interactions that take place during the formation of a network are important. This is to uncover the process that was followed by the focal actor in convincing the actors to become part of the network. As stated in Chapter Three, this section will also reveal powers that were at place during the process of problematisation.

The commonality in the approach of introducing the interest of the focal actor is that in all these projects the interest being addressed is that of a senior official. Again, the communication of the interest in all situations is in formal meetings. This means that the focal actor whose interests are to be addressed is higher in official power ranking than the other actors whose alignment of interests are required in order to form the network. In a discussion in Chapter Three, it is stated that power plays a key role in determining the success of translation. Furthermore, Heeks (2002) states that we are able to determine the amount of power by establishing the number of those who become members of the network.

In the case of the projects that were investigated, there was collective action - which can be associated with the notion of power. The commonality of the problem and the need to have the problem resolved is what holds collective action in place. Focal actors in these project instances have been successful by defining the problem and instituting a solution.

Both problems that were identified - lack of access to Government information and paper-based applications - were presented by the focal actor, together with a potential solution.

Bringing common vision and understanding in eGovernment projects is paramount. Various techniques were used in the case of EG4C, BIMS and ERS. The techniques used to bring common understanding should be effective as it is important that all actors have a common understanding of the goals and objectives of the project. These are some of the comments made by the respondents:

“There was somehow a consultative forum to get people on board, training was provided, there was a BRS produced.” (Comment by SR1).

“There was a lot of requirements documents, business requirement specification, user requirement specification, functional requirement specification, very detailed analysis which resulted in entity relation diagrams. There was a Cape online strategy and various other strategy documents.” (Comment TL1).

Over and above the above techniques used to bring actors to a common vision, there was one which was not expected, i.e. rebranding of the WCG (it was previously called the PGWC). This was a technique that was seen to be very effective.

“They emphasised branding. Everyone spoke about what we were creating and this thing called the portal was very much a product for citizens to use, and this product, like any other product, had to be branded. A lot of common vision of this thing was, how it should look was done through a branding process. This is an unusual approach, as government does not often think of branding.

*One would ask what branding has to do with this but you are talking about what this thing should look like, what should it should sound like, how should it feel like. I think it is a powerful way to unite stakeholders”.
(Comment by CM).*

5.3.8 The Policy Development

It became evident that the changes that were brought about by the eGovernment projects required development of new policies or revision of existing ones. Apparently this is an exercise that needs to be done quite early in the project as policies are a form of agreement on how things should be done. As alluded to in Chapter Two, there should be no gap between the plan and what the policy says should be happening (Bengton, 2006). These gaps in policy can be considered as inhibitors of success in eGovernment implementation. Policies are an important component in determining performance.

In the study conducted, policies became an important component which was mentioned by some of the respondents. They understood policy as a component of eGovernment which had to be addressed at early stages, hence it has come up at problematisation stage of the development of the network. Policies can also be seen as a tool that was used to get actors to a common ground and understanding of the project.

“We needed a service provider who could assist with the drafting of the policies as we didn’t have the relevant skills to draft policies, so they also assisted us and guided us in terms of what was needed in the content of the policy document.” (Comment by MMI).

“The usability policy was revised. The usability policy considered the key elements of the website like the colours of the website, accessibility, where the logo should be, font, and links.

*This policy was drawn in conjunction with best practices as guidelines.
The policy was also content policy.” (Comment by SRI, MMI).*

5.4 Interessement

Successful problematisation leads to the next stage of the development of the ANT, interessement. This will now be discussed, in relation to the findings.

5.4.1 Introduction

As alluded to in Chapter 3, interessement is where the focal actor locks the other actors into place by imposing himself and defining the linkages between the others (Gunawong & Ping, n.d.). The aim of the focal actor at this stage is to stabilise the other actors. In the context of eGovernment the realignment of interests would be to accept the eGovernment systems as necessary to address what already discussed in problematisation. The main objective of interessement is to develop acceptance of changes that the eGovernment projects will bring. Various strategies can be used at this stage of the actor network. The key here is for the focal actor to make other actors believe that his/her interests are consistent with theirs. The other actors must become interested in the proposed solution.

According to the theoretical framework, institutional infrastructure and leadership and strategic thinking play a key role in the interessement stage of the network. As in problematisation, failure of interessement would result in aborted eGovernment projects. Interessement can also be considered as glue that holds all other components of the eGovernment project together.

In the case of the WCG projects studied, there were various responses that related to interessement.

5.4.2 Presentation of objectives and vision of the project

Similar to the introduction of the project, senior level management was used to introduce the project vision to the rest of the stakeholders. Generally, most of the stakeholders were represented in meetings where the project objectives were communicated and vision charted. With regards to the EG4C project, the reaction was of mixed feelings. Some were enthusiastic and some were unhappy about the project. These were the responses relating to the vision and objectives of the projects:

A meeting where all stakeholders we thought would benefit from the project were invited. The aim was to make this project an official one.” (Comments by MM1, DVI, WD1).

“The people who were invited were my project team, developers and analyst, system controller, managers and the directors and all other people who would be working on the system. Management also needed to be there in order for us to know which input was needed.” (Comments by MM2).

It was more of an informal discussion where people were informed of what was to happen, where we were going and what we wanted to achieve. This meeting was also a sort of a call on everyone to support the project and also stating the kind of benefits that lied ahead for the stakeholder.” (Comments by SR3).

5.4.3 Project awareness creation

It is important to ensure that the eGovernment system to be developed is known by the potential users. If this is not done, it would amount to wastage of tax payer’s monies. On the other hand, it is important to understand how the system will benefit stakeholders. This would strengthen buy-in from the stakeholders.

As stated in Chapter Two, eGovernment is a way of improving government processes, connecting citizens, and building interactions with and within civil society (Heeks, 2001). Activities leading to this outcome are not only engaged when the eGovernment system is ready for use. It is imperative to get buy-in from the stakeholders right from the beginning of the project.

As Llewelyn (2003) states, eGovernment is about how government organises its administration, rules, regulations and frameworks set to carry out service delivery and co-ordinate, communicate and integrate processes. Given this view about eGovernment, it is important to ensure that there is awareness of what is happening before it actually happens. This is to avoid a situation where eGovernment systems are built and not used. This would amount to money spent towards the improvement of delivery of services with no benefit to the citizen for whom the services are meant.

In the WCG projects studied, the government officials went to great effort to ensure there was awareness and involvement of the stakeholders at early stages of the project. The evidence of such is as the responses below:

“There was some communication, and consultation with stakeholders. There were pamphlets distributed at train stations and the project was made to be a big thing in the province. There was radio and newspaper marketing that was done. There were also roadshows that were aimed at creating even more awareness about how things were changing.”
(Comment by SR1).

“They took our system to the students – those are people who would potentially apply for bursaries, and randomly asked people to use it and check how the process flow was. This process felt right – we knew that the project was about the people of the Western Cape Province and was well received.” (Comment by MM2).

“The marketing unit arranged a media briefing, radio advertisement campaign; there were agreements with various websites to share links of the portal.” (Comment by TL1, WD1).

“There was advertising, a dedicated team worked on the marketing. This was in the newspapers; shopping malls and I remember being in the radio interview. There was a whole marketing campaign that was undertaken.” (Comment by CM1).

“The information about the project was all over the show. It was in government magazine, TV, schools and universities. Also at the universities, promotional goods and notice boards contained information about this project.” (Comment by US2).

“We sent out a circular to all the schools on 2013 about the benefits of being online. We placed an article in the educator’s newspapers and posters at schools and universities. Then we started the road show and training. We started educators to register before we went online to avoid influx.” (Comment by SR3).

“The stakeholders understood the limitations and the problems that impacted the project because there was constant communication. There were roadshows held to try and educate the stakeholders about the project.” (Comment by WD1).

5.4.4 Leadership and strategic thinking

Leaders need to clearly articulate their development vision for eGovernment. In line with Heeks (2002) eGovernment development should be backed by a strong leadership structure to ensure appropriate communication and benchmark progress.

In essence, leadership should be considered a necessary ingredient in eGovernment projects. Leaders should know where they are taking the eGovernment. According to Heeks (2002) and Llewelyn (2003) leaders with vision are a crucial pre-condition for successful eGovernment project implementation. eGovernment champions should be leaders with vision who are able to put eGovernment on to the map and can make it happen. Heeks (2002) and Llewelyn (2003) consider leadership and strategic thinking as the most critical ingredient for eGovernment project success. Good leadership is able to break through many barriers in trying to make a success of their visions. Conversely, operational readiness for eGovernment is of limited value if there is no vision and leadership. Leaders are able to create value by engaging in creative dialogue.

In the eGovernment literature discussed in Chapter Two, an assertion has been made that governing factors are some of the contributors to the success or failure of eGovernment projects. Mouzelis (1995) posits that these factors include creating a shared vision of eGovernment projects, strategy, management support, and leadership. Among others, these are vital areas which should be addressed in the implementation of eGovernment projects. It is also important to note that literature has revealed these areas as weak.

When respondents were asked about the effectiveness of leadership in the eGovernment projects, these were the responses:

“Yes, leadership was very effective; they laid all the right foundations for the project to succeed”. Comment by SRI.

“The leadership was very effective and involved. They were let down by the service provider and the broader organisation who were against the adoption of eGovernment.” TL1.

“Yes, as it was my first time as developer, they supported me and guided me.” DV2.

“It was a difficult project to manage, considering the circumstances. Yes the leadership was effective.” CRI.

Two of the respondents did not see the leadership as effective.

“It was our own self-motivation that got us through this project, which means the leadership was not that effective.” (Comment by DVI).

Leadership was not effective, we were driving the project; we were coming with the ideas justifying to them or sometimes just bypass leadership because it takes longer to make decisions. Sometimes they are hesitant to make a decision. There was a lot of politics which affected the project negatively. There were a lot of people interfering in the project and leadership was not there to look after it.” (Comment by MM1).

What came out strongly in one of the responses is the effect of perceived bureaucratic processes that prevails in the operations of government. The evidence is as follows:

“Yes, according to team leadership it was. Working in government is bureaucratic with so many rules, which made it very difficult to get the work done. That actually lessened the effectiveness of leadership.” CMI.

This means that bureaucracy has an effect on how government employees see eGovernment initiatives. On addressing this issue I would like to draw attention to the theoretical framework which is discussed in Chapter Three. One of the eGovernment readiness factors mentioned is legal infrastructure. This factor is considered to be important as a foundation of eGovernment at problematisation stage of the ANT development. It therefore becomes important to deal with issues relating to laws and policy before proceeding to the next stage of the ANT.

This will ensure that the *e*Government projects are not held back by the laws and policies which were actually meant for environments which had no *e*Government in place. This is in line with Alvesson & SkoÈldberg (2000) who highlighted policy and legal aspects as some of the key considerations in the assessment of *e*Government readiness.

One of the important aspects that show evidence that leadership was effective is the fact that in all the projects there was a further plan and vision to take *e*Government to the next phase. In line with Sutton and Staw (1995), it may have been noticed from the nature of the projects that the EG4C project was at bill-board stage *e*Government where there was no interaction or manipulation of data by the public. On the other hand the ERS and BIMS projects were at partial service-delivery stage where users had some flexibility in what they could do over the internet.

Generally, even though the issue of bureaucracy still prevails in the environment, leadership was still seen to be effective by many respondents. This means that *e*Government was taken seriously at top management level and therefore it was easy for the rest of the organisation to follow. Championship of *e*Government systems was mentioned by two of the respondents. The feeling was that there should have been some government officials who were responsible for nurturing the use of *e*Government systems. This would be done as a way of ushering government employees into using the system. The same approach would also be applicable to the citizens. This would assist in the mind-set change. Seniority of champions is one of the factors to consider. If we consider the notion of power as discussed in Chapter Three, we would understand why respondents think that the champions should be senior officials. Seniority is associated with a certain level of power. According to Swedberg (2010), the amount of power is determined by those who become members of the network.

Some comments in this regard include the following:

“When those people left, it was gone. I think maybe one of the weaknesses wasn’t enough success in getting very senior championship leadership going.” (Comment by SR1).

“There should have been a champion for eGovernment and it should have been taken at much higher transversal level.” (Comment by TL1).

One of the factors which respondents considered to have an impact on the success of the eGovernment projects is change management. This aspect relates to championing of eGovernment systems. Moving from a manual system to an automated, internet-based system is a big change, particularly if you are introducing the citizens to such a change. Such a change needs to be managed. In the projects that were studied, one of the respondents felt that change management was not done well enough.

“I don’t think that change management was done very well.” (Comment by DV2).

On the other hand, three respondents felt that change management was done well. The bottom line is that change management was considered and was actually pursued.

“Change management was done well enough.” (Comment by SR1).

“Change management initiatives were introduced and they were effective.” (Comment by DV3, MM2).

Change Management initiatives made them understand the importance of the project.” (Comment by SR3, DV1).

5.4.5 Project Championing

Project championing is one of the aspects that were revealed in this study. According to Mfeka (2003), eGovernment championing is essential in order to better understand and to shape the ICT infrastructure relating to eGovernment. On the other hand, Heeks (2001) states that eGovernment championship is critical for successful eGovernment. He further states that leaders with vision who put eGovernment onto the agenda are necessary to drive eGovernment initiatives forward. In the case of WCG which was used as a case in this research, SR1, SR2 and SR3 were champions in their respective projects. In line with Heeks (2001), this showed awareness, knowledge, skill and commitment from senior leadership in the WCG.

In the context of this research the focal actor can be regarded as the champion, failing which any spokespeople of the focal actor could play the role of championing the eGovernment project. One of the problems identified lies with the EG4C project where the project champion was also regarded as the personality behind the project. This, therefore, means that the project was associated with the personality instead of the structure. The problem that was experienced with this abnormality is that when the project champion resigned, the other actors were no longer loyal to the project. Their loyalty was actually with the personality. This means that the actors of the network need to be correctly focussed so as to understand that the structure is more important than the personality.

These are some of the response that were cited in this regard:

"The problem was that the project was very much personality driven. It was not institutionalised and it's the way things work around here. It will take time before people understand that it is not about the person."
(Comment by MM1).

"There should have been more emphasis on project championship rather than focusing on the individual. Such a champion should have come from a much higher and transversal level. The project was centred around a personality and the team supported a person rather than and institutional initiative." (Comment by TL1).

"I think there were some people who were working on the project who relied a lot on personality and that did a lot of harm to the project. When these people left, there were problems associated with loyalty. I think, maybe, there needed to more senior championship in the project." (Comment by DVI).

These are some of the comments made by the respondents from the BIMS and the ERS projects:

"There was championship of the project and it worked in leading the project to success." (Comments from DV2 & CR3).

5.4.6 Usability laboratories

One of the new concepts in eGovernment that came up in the interactions with the respondents was the user experience (UX). According to Nielson & Norman (2014), user experience encompasses all aspects of the end user interactions with the system. True user experience goes beyond providing customers with what they want but should exceed the expectations. User experience can be considered a process of enhancing user satisfaction by improving the usability of a particular system. This involves the pleasure and ease of use experienced during the use of a particular product.

"As a BA I was also doing user experience (UX) work. There were also designers, User experience, and content team." (Comment by BA1).

“Some of our college did courses and research on eParticipation. We are one of the few governments that have a usability lab. In this lab we create something; we look at business requirements, best practices, we create designs, and then prototypes. We were looking at usability as a tool for public participation. Public participation involves getting the citizen involved in testing and giving feedback. Usability and user experience were considered key in this project. This has really helped in making this project succeed. In this project it was not a matter of what we though looked nice but the citizen was in the centre.” (Comment by WD1).

"We invited some of the students who were interested in applying for the government bursary and asked them to use our system through our user experience labs. The feedback was that of easy to use, quick and seamless. This was our way of making sure that we do provide what we think would be of value to our citizens." (Comment by SR2).

User experience is an important aspect of eGovernment which literature does not say much about. Even though some of the reasons for eGovernment project failure are attributed to the readiness factors alluded to in Chapter Two, user experience could contribute substantially to failure. I consider user experience as a silent inhibitor of eGovernment projects. User experience should be factored in when running with eGovernment projects.

User experience can also be linked to change management because when a new eGovernment system is implemented, citizens are taken out of their comfort zones and ushered in this new way of doing things which they could resist or reject due to fear of change. We cannot ignore the fact that some people prefer to work with physical paper and unless they are ushered properly into the new eGovernment system they will not use it.

5.4.7 Alignment of interests

Interessement is a stage of the network where the focal actor locks other actors into place by imposing himself and locking others into position (Callon, 1986). In efforts of interessement there is a positive relationship between action and success rather than just talk. From the respondents' views, it is evident that interessement was successful. The fact that some felt interessement was not effective means that there was still room for improvement in this area. This would have strengthened the network of aligned interests even further. These are the responses that indicate the outcome of interessement:

“They just wanted was to see the system working.” (Comment by DV2).

“Positive. Everyone was focused on celebrating after delivery. They pushed to make the benefits a reality. Easy to used, information must be memorable.” (Comment by WD1).

“A lot of the people were interested and wanted to see demonstration. It drew a lot of interest from a lot of districts and units.” (Comment by US2).

Some of the respondents attributed the success to various actions that were taken during the process of interessement.

“Appropriate marketing techniques were really necessary.” (Comment by SR1).

“Probably the fact that the new system would make our lives easier with fewer hassles.” (Comment by US2).

It appears that the key motivator of the project team was the contribution to improve the way things are done. Everyone seemed to be enthusiastic about the success of what was being developed.

5.5 Enrolment

After successful intersement the roles of actors in the newly created network need to be defined. This stage of the network, as explained in Chapter Three, ensures that the actors have been assigned to specific roles and responsibilities so that their inclusion in the network is justified. It is important for actors to understand the significance of their role in the actor-network. Inscription serves to strengthen the enrolment of the actors and to ensure that the actors do not betray the focal actor. This section will uncover the factors that the respondents perceive to affect their decision to become part of the *eGovernment* projects. This would provide insight into how to define the role of the actors in the actor-network.

Several factors were considered to impact the respondent's decisions to take part in the *eGovernment* projects. These serve to define the responsibility of the human actor in the *eGovernment* actor-network. Two categories have been abstracted from these factors, including responsibility to the society and personal fulfilment. The variables that underpin the category 'responsibility to society' are collective cognitive responsibility, reciprocity and benefits to the citizen. Collectively these constitute the government employees' responsibility to their jobs. Collective cognitive responsibility is a notion that is derived from the concept of collective responsibility, defined by Scardamalia (2002) as the condition in which responsibility for the success of a group effort lies with all the members and is not just centered around the leader. In an environment where being part of an *eGovernment* project is the key element of a job, cognition should be considered in addition to practical aspects of work. The following statements serve to substantiate this notion:

“We were playing our roles which we were employed for and coming up with the ideas. I went as far as training the person although it wasn’t my job.” (Comment by MM1).

“It was fulfilling knowing I was part of something that would benefit the citizen.” (Comment by MM2).

“We were always encouraged by what we wanted to achieve with the website. We always had the citizen in mind. There was a sense of pride of knowing that we were doing something that will benefit someone out there in the Western Cape. This was encouraging. The project was part of our deliverables which we had to achieve. There were frequent updates on the progress of the project given to stakeholders. They constantly reminded of the benefits of the project.” (Comment by WD1).

“Yes. I loved it and I found content fascinating. For me it was very exciting. I am passionate about social change and government and to be working in the area of government access to information, which is actually a human rights issue; citizens should have access to information. For we were actually dealing with citizen rights more than a website.” (Comment by CM1).

5.5.1 Understanding of roles in eGovernment projects

For any project to move forward all members of the project team need to understand their roles. These do not only pertain to direct project related activities but all project stakeholders. Self-efficacy, which can be seen as one’s belief in their ability to complete a task (Bandura, 1994), came out strongly in the project team. Self-efficacy is people’s beliefs about their capabilities to a product of certain quality standard (Bandura, 1994).

Self-efficacy beliefs determine how people feel, motivate themselves and behave. In the three eGovernment projects studied there was a strong sense of self-efficacy which helped enhance the level of achievement. The following statement highlights self-efficacy:

“Yes, the roles were clear. It was a new thing that the government was doing. In some areas of work there are very clear roles because people were doing this for a while. In this project, there were a number of new and innovative things like it was not like a job description could be downloaded from the internet and understood by everybody. Job descriptions for some roles did not exist and had to be defined. There was willingness to learn in the roles because it was quite new what we were doing. People really believed in themselves.” (Comment by CM1).

"My motivation came from within. I just wanted to make a difference in this country. I considered being part of such a project to be a privilege which not many would get. I knew this project was for the good of the citizens and that motivated me." (Comment by DV3).

Self-efficacy is one of the important characteristics that have emerged during eGovernment research. Even though technical aspects are important in eGovernment implementation, social factors can be of great importance for effective eGovernment implementation. These contribute positively towards strengthening the network of aligned interests. This does not mean technical aspects can be omitted but an attempt is made to draw from social factors such as self-efficacy, collective cognitive responsibility, enjoyment of contributing positively to society and individual expectations, have proved to have a significant influence on motivations for eGovernment implementation. Similar studies of this nature have been conducted by Bandura (1997), Bishop (2007), and Compeau and Higgins (1995).

In essence, strong self-efficacy has an ability to enhance one's level of achievement as highlighted in the statements above. It has been noted that personal motivating factors are not only applicable to factors of enrolment but also to perceived individual benefits for passing through the OPP.

5.5.2 Stakeholder buy-in

Buy-in is critical in the development of a network. In fact there can be no network of aligned interests if actors do not buy into the focal actor's ideas and enrol. Enrolment in a network is one of the ways of showing that there is development in the network stability towards irreversibility. In the eGovernment projects studied, stakeholder buy-in was a critical factor whose absence could have hindered the success of the projects. From the respondents comments there is evidence that there was stakeholder buy-in in all the projects. This does not mean this did not have challenges, for example:

“I think the big picture wasn't understood yet and change management was done well enough.” (Comment by SR1).

“I think there was mixed buy in.” (Comment by TL1, CM1).

“There was some resistance from some as they were used to doing it the old way. For example a chairperson of the School Governing Body (SGB) came in very upset one day because he was not happy with the system. I asked what would be different if you had the manual application and he said he would have a green page and the picture of the person and that's what we were moving from but it has taken us longer for people to get used to the system.” (Comment by SR3, DV3).

We took to the Western Cape Education Department (WCED) to get buy-in although they had their concerns but they bought in.” (Comment by BA3).

It is important to note that the stakeholders went through the network development stages until they were able to get to the enrolment stage. These are some of the comments from the respondents:

“There was a lot of enthusiasm, it was the sort of visible end of IT. There were few who thought it was extra work and those who thought it was extra work are people who thought this is just becoming a burden to us not seeing the big picture.” (Comment by SR1).

I would say citizens did buy-in because of the growth in numbers and the interaction.” (Comment by MM1).

“Oh, yes, they did buy-in.” (Comment by MM2).

“Yes they did because in the past there was no website system that they can apply from. So this is the only system they can apply on and they actually wanted one because you get a lot of people who came from rural areas like George so Cape Town was far. So it was good for them.” (Comment by US2). “Moving from document based approach to captaincy based approach. We had no challenge from the IT department we immediately had a buy in we didn’t have to convince them. The Chief Director did a presentation to the executive team who had an immediate buy in as well.” (Comment by BA3).

“We had immediate buy in from our executive team.” (Comment by SR3).

Enrolment is a critical stage of the actor network. This is where one sees the evidence that stakeholders have bought-in. Again, buy-in may not always be due to the fact that actors are seeing benefits for themselves; they might be motivated by their contribution which will benefit others. A sense of efficacy, as discussed previously, may take effect in this case.

5.6 Irreversibility

5.6.1 Introduction

Irreversibility is the final stage of the development of the network of aligned interests by actors. As discussed in Chapter Three, irreversibility must be established in order to reach a state of stability of the network. For human actors it is the social factors that strengthen the actor-network so that it does not change in response to changing circumstances. This is the desired state of actor networks. In the case of the project studied, two of the projects reached a strong state of irreversibility. This can be due to a number of factors which are discussed below.

In respect of this project, irreversibility replaces enrolment, in that spokespeople are the entrenchment. The network of aligned interests can no longer be broken due to the fact that the *eGovernment* processes have been fully institutionalised. This means that *eGovernment* has become a way of life to such an extent that it contributes positively towards service delivery.

5.6.2 Project outcome

The outcome of all projects studies was a success even though one project's state of irreversibility is questionable in the EG4C project. Its questionability is discussed later in this section.

“We now have a lot more sophistication in our relationship with our clients. We are now able to manage relationships very well. The content

is maintained extremely well now. Our governance around the portal is very strong. We got the right services grouped together to implement eGovernment. Information is readily available for our clients.”
(Comments by SR1).

“We have succeeded; it just took a bit longer than anticipated.”
(Comments by DVI).

“Successful! It was very successful and was demonstrated in the management forums, the directorates and clients they were wowed and the feeling was very good.” (Comments by BA2).

“Overall it was successful, there were glitches here and there but that was all dealt with in post migration. All of those things were looked into in post evaluation and those issues were identified after the migration took place.” (Comments by CR1).

“Successful! It was very successful there was a presentation in Cromaria. The directorates and client was wowed and the feeling was very good.”
(Comments by CMI).

“Great success!” (Comments by US1, US2 & US3).

What makes the following two comments particularly notable is the fact that it was so successful that it was adopted by other government departments who needed a system to support similar processes.

“I would say that that it was a success; this system was adopted to be a transversal system. All the government departments and bursaries

systems are now able to use it. It was successful and a good learning area for us.” (Comments by MM2).

It was so successful that other departments intruded in it.” (Comments by MM2, DV2).

It is important to note that the following comments had important bearing on the quality of irreversibility of the EG4C project. The comment below suggests that the resources that were used on the project may not have had all the necessary skills, particularly in the web development area. Throughout the literature review in Chapter Two, skills shortages have been mentioned as one of the key areas where eGovernment projects suffered. Again in the theoretical framework, in Chapter Three, human resource (HR) knowledge and skills are one of the eGovernment factors. The less ready the government is in terms of HR knowledge and skills, the more likely that the eGovernment project may not succeed or even have partial success. This impacts the ability to deliver eGovernment projects. In this particular case, even though the skills were available, they were not adequately equipped to deliver the expected quality of a project. The statement below carries more weight since it comes from a senior person in the IT development environment. It may have been easy to overlook this weakness of the project as very few people in the project would be at the level of a team leader in terms of systems development skills. This comment is noted as one of the critical shortfalls in the available pool of skills and could influence the success of the project or the irreversibility of the network of the aligned interests.

“The design of the original platform was very poor. This was expected, as this was a totally new thing that the government was doing. On the other hand, the open source content management systems were not as matured as they are now when we were building that in 2003/2004. Drupal and WordPress have risen to popularity. It would be ridiculous today to build something from scratch when there are such powerful

applications that are open source. The way the site was structured it was search engine friendly. It also had very high quality content. This led to more and more people using the portal. I was not happy with the technical aspects of the project. When I started, some of the code was already written. I could see a lot of problems in the code and I was also responsible for doing a lot the fixes. It did not meet my standards of a good code.” (Comments by TLI, DV1).

One additional issue being raised by the comment below is that fact that at the time of implementing the EG4C project, the WCG was not 100% ready in terms of technology. In addition to the poor design of the portal which may have been caused by skills limitation, an issue of connectivity has been raised. With reference to the theoretical framework which was discussed in Chapter Three, technological infrastructure has been identified as one of the eGovernment readiness factors. This means that, if technological infrastructure is not addressed prior the implementation of the eGovernment project, it is bound to fail or have partial success.

“It was a short-term success. Over time it languished and the immediate short-term wins were not capitalised on. The objectives of the project over a long time were not met as they should have been. This project was partial success. One of the things that were not correctly realized was a distributed content management model where they wanted dozens or maybe hundreds of people using the system and updating it. That was not properly realised for a number of reasons, like connectivity was poor; there was very slow connection and lack of support from the departments to maintain their content of the portal. The technical issues may have been caused by poor design of the portal.” (Comments by TLI).

5.6.3 Project closure and handover

Project closure and handover marks the end of the project and the beginning of the systems' operational life. This is the time where all open items are cleaned out, there is finalising of documentation and production support material (user guides), preparation of end-of-project administrative reports, release notes, and financial reports. It is not unusual to have projects closed with a celebration and an awareness campaign. In the case of the projects studied, these projects were closed off with huge campaigns and some with celebrations.

The objective is that at this stage, the focal actor must have made so much progress it is not easy or even possible to revert to the old ways of doing things. The handover process should actually further strengthen the irreversibility of a network. It should be a milestone which should be remembered by all stakeholders. These are some of the comments about the project handover of the projects that are in this study:

“There was a big launch function. The CIO spent a lot on the fancy dinner where there were speeches etc. This was for the internal staff.”
(Comments by MM1, CM1).

“The schools we demonstrated to, the Department of Health head of department (HOD), the management of the department up to the director of the human resources”. (Comments by MM2).

“We launched it with all the directors and chief director to make them aware of it. As well as on our application form and website, it is on there. Also when the students signed the bursary contracts they had to capture their details online, they also experienced it themselves.” (Comments by US2).

“There was a big noise made during hand over.” (Comments by SR1).

5.6.4 E-Government system post-project implementation

5.6.4.1 Project: EG4C

This project was implemented and was considered a success by many. After a year or two, the system usage died down as the site was not maintained as it should have been. The issue as already indicated above, is that there was no proper planning in terms of how the eGovernment system would be supported post implementation. The life of a portal depends on information that is up-to-date. If the information is not updated regularly, the portal ceases to be of value to the citizens. This may be caused by the fact that some of the WCG departments were resisting becoming part of the portal project or there was no proper training of resources that would be responsible for the portal.

Another issue is that within a short space of time after implementation, there was a need for the system to be upgraded. This was caused by the issues that were experienced such as the slow speed of the network, poor system design, and bad choice of software. These are the infrastructure related matters which were not properly addressed at early stages of the project and are now causing problems. The envisaged upgrade failed. Monies were spent but there was no implementation.

The conclusion about this project that can be drawn is that it was a partial success.

5.6.4.2 Projects: BIMS and ERS

These two projects are very similar in how they progressed from one stage to another. Even though there was little resistance on the ERS project from the SGB, that was resolved quite early and the project was able to progress. In these projects stakeholders saw value and were willing to participate in the network.

Both projects are fully operational and there is a plan to roll them out in other provinces and even to the national government. There seems to have been better level of readiness in these projects than the EG4C project. There will be further discussion on this matter in the next chapter.

5.7 Lessons Learnt: eGovernment project implementation

Various lessons have been learnt from this study. As eGovernment is a new concept, there are strategies that need to be mastered in order to make its implementation seamless. The concept of eGovernment still has to be cultivated in the minds of the public to get their buy-in in order to ensure success. One may think eGovernment issues are mostly associated with the public, but the reality is that a number of issues are from within the government itself. The evidence is the following comment from the respondents:

"The challenge is that it is not always about the public but getting buy-in from government departments to use and maintain eGovernment systems. People need assurance that eGovernment is not implemented to take their jobs but to make life easy for the citizen." (Comment by SR1).

The other lesson learnt is that eGovernment championship should be detached from individuals and must be structural. Attaching such an initiative to a personality causes problems which are difficult to rectify. eGovernment project championing should be institutionalised.

"The problem is it was still very much personality driven, it wasn't institutionalised and now it's part of the way we work and it takes time to get to that point." (Comments by MM1).

Top management support is invaluable in such an initiative. Top management need to be visionaries who are able to direct eGovernment initiatives to the future. Some

respondents think it would have been better if top management was actually committed and involved in the eGovernment projects.

“The top management support needed to be stronger and they needed to be more commitment to eGovernment. There was a lot of lip service paid to eGovernment and when the project delivered and ran into problems, it was no longer a priority. There should have been a champion for eGovernment and it should have been taken at much higher transversal level. It should have been ubiquitous and transversal. The project was centered on a personality. The team could have been supporting the person rather than being faithful to the project.” (Comments by TL1).

“There were times when we were under resourced and it was a challenge finding them. This made things difficult where deadlines were missed.” (Comments by WD1).

“Increase the budget and skills. It took too long to get to the role planning stages, so in my opinion it took long and planning was not proper.” (Comments by US2).

“The lessons learnt were that the department was too big. It probably would have made more sense to automate the application process of the public servants which was about 6 000 people instead of the 32 000. But what worked for me was that I didn’t know the department so I had no fears for taking in the large numbers. Ignorance was bliss and that is the feedback I got. So it was the size as well as the fact that we have gone from 17000 to 42000 because it has become so easy to apply.” (Comments by SR3).

Irreversibility, in the case of the projects that have been used in this study, replaces enrolment. Spokespeople became the entrenchment and that contributed to the network of aligned interests becoming strong and unbreakable. Institutionalisation of the projects

has also strengthened irreversibility, which in turn strengthened the ability of the WCG to deliver services.

5.8 Chapter Summary

This chapter revisited the theoretical framework and, applied the Actor Network Theory ‘moments of translation’ concepts of *Problematization*, *Interessement*, and *Enrolment*, and the *stage of irreversibility*, to the findings that were gathered as a result of the case study research into three eGovernance projects in the Western Cape Government. The lessons learned from the research were summarized.

In the following chapter, the initial theoretical framework will be revisited and further refined, based on the findings.

CHAPTER 6: Theoretical Framework Revisited

6.1 Introduction

Having gone through the findings and interpretations, it becomes imperative to revisit the study's theoretical framework. This framework will now be refined in conjunction with the findings and interpretations. The refinement of the framework is informed by Actor Network Theory as the underpinning theory, together with the application of the principle of institutionalisation. The factors that play a major role in the refinement are based on the initial theoretical framework shown in Figure 6. This represents new knowledge about eGovernment readiness and the factors that should be considered as crucial.

Table 10 summarises the level of readiness, highlighting in one Table the readiness factors, the ANT concepts and the readiness findings from the three eGovernance projects studied in the WCG case study.

Table 10: Level of Readiness

Readiness Factor	ANT	Projects		
		EG4C	BIM	ERS
Process Infrastructure	OPP	Moderate	Good	Good
Legal Infrastructure	Problematization	Good	Good	Good
Institutional Infrastructure	Interessement	Good	Good	Good
Human Infrastructure	Problematization	Good	Good	Good
Leadership and Strategic Thinking	Interessement	Good	Good	Good
Technological Infrastructure	OPP	Moderate	Good	Good

Due to some shortcomings relating to OPP (process infrastructure and technological infrastructure) in the EG4C project, the outcome of the project has been interpreted to be near success. The reason for this outcome is the fact that the Department of the Premier is considered not to have been ready to implement the *eGovernment* project, but rather near ready.

For provincial and local governments whose main mandate is to deliver basic services to the citizens, the *eGovernment* initiatives are key in enabling these tiers of government to improve service delivery, and to integrate and manage relationships with citizens and business. Based on the findings highlighted in Chapter Five, it is argued here that, the *eGovernment* readiness of any developing country or government, to successfully implement *eGovernment* initiatives, can be studied using the concepts of moments of translation and irreversibility of ANT. It has been shown in the WCG case study that moments of translation can be used as a lens through which to understand and interpret the readiness of governments to successfully implement *eGovernment* projects with the aim of improving services to its citizens and business. Moments of Translation and Irreversibility, used as a general framework, further demonstrates over time and space the degree of readiness (*See Table 8*) for successful implementation of *eGovernment* projects.

6.2 Key learning

As an outcome of this study, the following key learning emerged:

6.2.1 Legal and Process infrastructure

It became evident from the research that the changes that were brought about by the *eGovernment* projects required development of new policies or revision of existing ones. This was revealed to be an exercise that needs to be done quite early in the project as policies are a form of agreements on how things are done. There should be no gap between what the policy says should be happening and the *eGovernment* project plan.

These gaps in policy are considered as inhibitors of success in *eGovernment* implementation. Policies are an important component in determining performance and also empower users of technology.

The study showed that actors understood policy as a component of *eGovernment* which had to be addressed at early stages of the planning of the initiative; hence it came up at problematisation stage of the development of the network. Furthermore, policies were seen as tools that were used to get actors to a common understanding of the project. This was the case with the projects 1 and 3. The study also showed that the ultimatum that came from the Department of the Premier to redesign the websites to create a centralised portal for all departments across the provincial government was the strength for the aligned interests.

In view of *eGovernment* projects, the project must be linked to a key strategic objective of the government and arguably, should be the basis for rebranding the government's service delivery strategies. The latter initiates changes to align processes. This is the formalization of the OPP – a means by which the focal actor is able to integrate and manage relationships with actors into one vision. Given Figure 2 and 3, it is clear that acceptance of the focal actor's interest must be irreversible and therefore all stages of moments of translation must be followed, iteratively, to complete problematisation before interessement.

6.2.2 Institutional Infrastructure

The main objective of interessement is to develop acceptance of changes that the *eGovernment* projects will bring i.e., awareness as a means to facilitate change for *eGovernment* which serves as a glue that holds all other components of the *eGovernment* project together - the establishment of a new institutional infrastructure. The awareness and the buy-in for the *eGovernment* initiative was driven from the rebranding of the government service delivery strategy using the phrase “Building the best run regional government in the world” to align diverse interests.

Figures 10 and 11 illustrate the need to go through all the stages of moments of translation iteratively, before the next major stage (i.e. enrolment) of moments of translation to ensure all diverse interests are aligned to the focal actor's interest of building the best run regional government in the world.

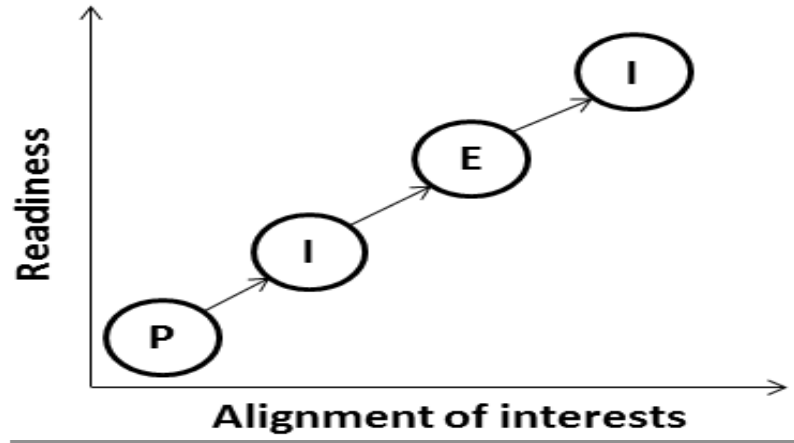


Figure 10: Readiness at each stage of moments of translation

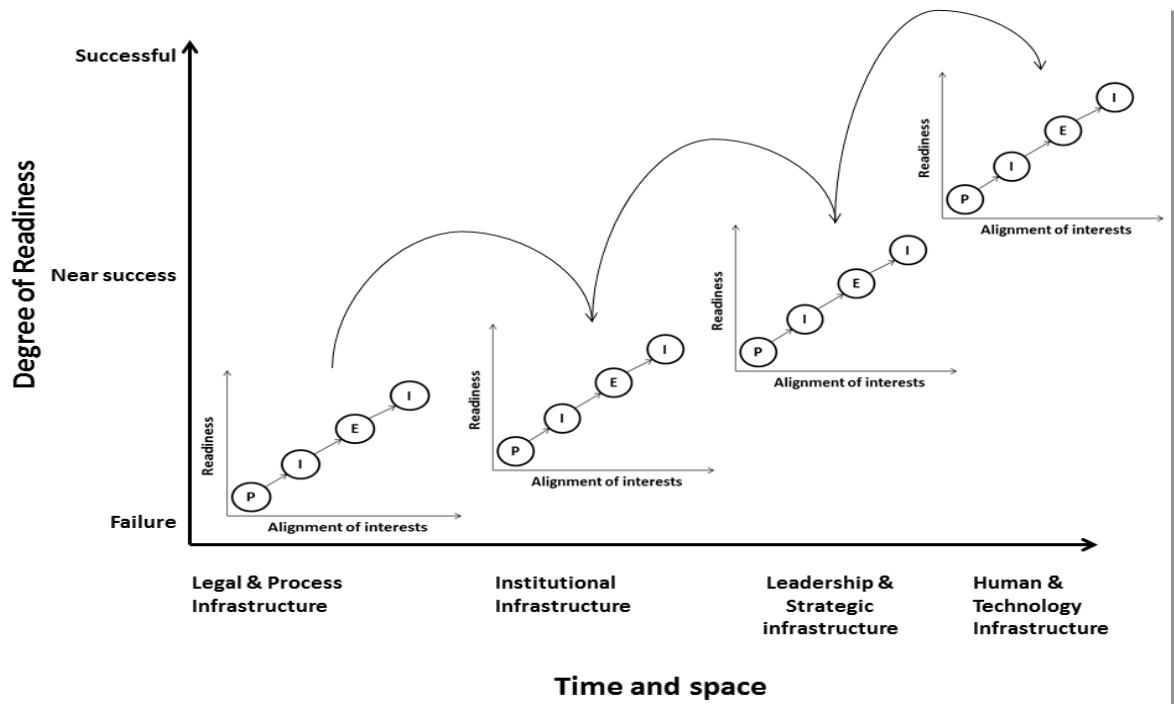


Figure 11: Degree of readiness for successful eGovernment Projects

6.2.3 Strategic leadership infrastructure

Government bureaucracy is seen as a means to ensure corporate governance. Many employees saw bureaucracy to have an effect on *e*Government as initiative. In the view of this study, the use of policies and specific guidelines, and where necessary to suspend or do away with existing policies and regulations, are likely to impact the *e*Government initiative as an issue of strategic leadership. Therefore given the results of the interviews, the ability of senior management to review existing policies and regulations to align with the key strategic objectives of the government mandate and that of the objectives of the *e*Government, is critical for the success of *e*Government initiatives. Furthermore, making the objectives of the *e*Government project a key performance indicator (KPI) of all managers strengthens the strategic leadership infrastructure. The KPI empowered senior management (Swedberg, 2010) to drive project meetings at all levels to ensure understanding of the benefits of the project, acceptance of, and participation in, the project by all stakeholders. Different project meetings at different levels which embraced all stakeholders, helped to obtain extensive buy-in across government and users.

6.2.4 Human and technology infrastructure

Irreversibility is a state of stability of the network of aligned and diverse interests. In the context of *e*Government initiatives and in particular this study, *e*competency (i.e., IT related skills and knowledge) was seen to be critical. Also, change in processes to align with focal actor's interest by other departments, led to change in non-standard technology platforms and design principles, to one enterprise architecture. The new *e*competencies and enterprise architecture constituted the human and technology infrastructure. The recommendation is that the success of *e*Government projects depends on redefinition of the *e*competency needed and the establishment of an enterprise architecture strategy. This identification, redefinition and establishment is done iteratively i.e., the state of stability of the *e*Government network or state of irreversibility is achieved through its own moments of translation.

6.3 Findings - The concept of institutionalization

The concept of institutionalisation was explored in 3.7 in Chapter Three, and seen as a process of committing an individual and group to a particular way of doing things. It was considered to also apply to the creation and organisation of particular bodies responsible for overseeing or implementing *eGovernment* technology.

As was evident from the discussion in 6.2, the key aspect of the research finding is the relevance of the concept of institutionalisation, and its contribution towards the entrenchment of *eGovernment* in the network of aligned interests. This finding also supports the notion that institutionalisation of a network of actors with aligned interests can be supported by an appropriate *eGovernment* system. Such an *eGovernment* system would have derived the programme of action from the appropriate strategic objective of the provincial government. When enrolled as an actor into the existing network, the *eGovernment* system ensures through its routine use, that all actors in the network interpret certain interests consistently and apply them uniformly. As the *eGovernment* system becomes entrenched in the network, it has an increasing influence on the network of aligned interests. In terms of actors' interests, standardisation and new ways of communication, the *eGovernment* system becomes a definitive source of organisational memory. This increases the stability of the network and the institutionalisation of the system as technology-in-practice, leading to strengthened irreversibility, and therefore increased institutionalisation of the network of aligned interests.

These results are captured in a general framework which can be regarded as a refinement of the original theoretical framework. Based on the general framework, a normative approach to introduce *eGovernment* systems to support services delivery is proposed and discussed. Institutionalisation of *eGovernment* readiness factors in an iterative manner would in all likelihood lead to increased irreversibility, and therefore increased institutionalisation of the network as a whole.

6.3 Recommendations

The revised framework addresses the concept of institutionalisation. As discussed in Chapter Three, this can be viewed as formalisation of *e*Government in a given department. Institutionalisation is not an end but a process which should happen iteratively throughout the development of the network of aligned interests. An iterative approach ensures that each of the stages of the actor network are completely institutionalised before proceeding to the next stage. Thereby, the process would not allow any of the stages of the network to be undermined leading to non-alignment of interests of the actor network or a weakened state of irreversibility.

Various strategies can be followed in institutionalising the stages of the actor network. In the case of this research, drafting of new policies which enforce change to accommodate *e*Government initiatives was one of the approaches used. As discussed earlier, the issue of policies needs to be addressed during early development stages of the network as they give guidance on how things need to be done.

This ends this chapter. In Chapter Seven, the contribution of this study is explained. The study's limitations and opportunities for further research are also discussed.

CHAPTER 7: CONCLUSION

7.1 Introduction

Chapter Five presented the findings and interpretation of the qualitative data collected via the interviews. Chapter Six contained a refinement of the original theoretical framework that had guided the collection of the data and the interpretation of the findings through the lens of Actor Network Theory.

This chapter provides a conclusion to this thesis and revisits the more pertinent areas the research covered. In addition, this chapter will also engage a discussion in relation to the literature review that was conducted in Chapter Two and explain new insights that emerged in this research. The discussion will begin with a background look at what was already known about the problem. Thereafter a statement of the interpretation with reference to Chapter 5 will be made. In this process, reference back to the literature in Chapter Two will be made, and certain explanations will be provided.

Following this, I will provide a discussion of the contributions this study has made in the area of *eGovernment* readiness. This will then be followed by a reflection on the practical implications of the research findings, an outline of research limitations, and some direction relating to future research in the area of *eGovernment* readiness.

7.2 Revisiting the literature review

The angle taken by this research has been one of looking at *eGovernment* as a contributor toward service delivery. *eGovernment* promises of more efficient, transparent and accessible public services to citizens and businesses (Swedberg, 2010) has been highlighted. Although the literature reveals that the benefits of *eGovernment* are well documented, readiness for *eGovernment* implementation is an area that still needs more attention, particularly in developing countries.

It has been my stance that understanding and addressing the readiness of *eGovernment* will save governments in developing countries large sums of money that are currently being spent on *eGovernment* initiatives which are either failing or are not giving the anticipated return, with the net effect that citizens are not able to benefit from investments in *eGovernment* initiatives.

Chapter One outlined the background and the rationale of the research. Key to this chapter was the presentation of the research problem which revealed various motivations for conducting this research. The aims of the study were stated, which were also used in the development of the theoretical framework for *eGovernment* readiness which can be used to inform decision makers of *eGovernment* initiatives in developing countries. The main research question driving the study was, *How can governments determine their readiness to implement eGovernment projects?*

Chapter Two encompassed a critical review of the literature on *eGovernment*, which resulted in an understanding of the background and fundamentals of *eGovernment* and assisted in identifying the scope of the research problem. The chapter began by looking at the developmental stages relating to the emergence of *eGovernment* and proceeded to the debatable issues of *eGovernment*.

To further authenticate the relevance of this study, an exploration of *eGovernment* in Africa was conducted to get an understanding of the stage where these countries are in terms of *eGovernment* development. West's (2004) four stages of *eGovernance*, namely *Bill-board stage*, *Partial service-delivery stage*; *Portal stage, with fully executable and integrated service delivery, stage*; and the *Interactive democracy with public outreach and accountability enhancing features stage* (the latter sometimes referred to as the "transformational stage") were explained and later used in interpreting the stages of the WCG projects.

Special characteristics of developing countries relating to *e*Government in comparison to developed countries were also explored. The literature revealed that developed countries are reaping the benefits of *e*Government, while developing countries struggle to implement such technologies.

The literature review also revealed the factors that need to be considered in evaluating *e*Government readiness for a country, these being Infrastructure Readiness, Legal Infrastructure Readiness, Institutional Infrastructure Readiness, Human Infrastructure Readiness, Leadership and Strategic Thinking Readiness, and Technological Infrastructure Readiness

It was also revealed by literature that models used by developed countries are not necessarily suitable for use by developing countries, making it imperative to explore the suitability of these models with the aim of adjusting them to suit the particular country.

Chapter Two concluded with the focus on South Africa touching on the structure of government, the level of government that is key in service delivery and the *e*Government readiness of South Africa.

Further, in-depth discussion was conducted in Chapter Three, with a focus on *e*Government and the critical factors that had been identified for *e*Government readiness. This facilitated the building of the primary theoretical framework. The study used Actor Network Theory as a lens through which to study the technological and social factors that need to be considered in assessing the readiness for *e*Government implementation. It identified that ‘moments of translation’ – of problematisation, interessement, enrolment and mobilisation were key concepts in the development of networks of common interests, as was irreversibility. These concepts were later applied in Chapter Five to the findings from the case study. Chapter Three thus conceptualised the research, which gave direction and focused the research on the key areas the research needed to investigate.

The research approach was presented in Chapter Four. This chapter first introduced the philosophical stance underpinning the study and then specified the methods that were followed in collecting and interpreting qualitative data using ANT as a tool. The phase further gave background of the case and the units of analysis, which, in this study was three Western Cape Government eGovernance projects.

Chapter 5 presented the findings and interpretation. The open-ended interviews were conducted with 26 respondents who were involved in eGovernment in the WCG. The findings and interpretation led to two major outcomes: (i) confirmation of the factors which are to be considered before implementing eGovernment and, (ii) the need for iterative institutionalisation of each stage of the ANT before moving to the next in order to increase chances of success of eGovernment project implementation. This phase concluded with revisiting the theoretical framework that was refined, taking into account the literature and the interpretation of the data.

Illustration of how the framework can be utilised and an in-depth discussion of the research findings and analysis drew the research towards its final conclusions and remarks, which is this chapter.

7.3 Contribution

The theoretical contribution of this research lies in the application of the concept of Moments of Translation of the ANT and the concept of irreversibility as a lens through which one can study the interplay between role players or stakeholders of a socially constructed phenomenon such as eGovernment readiness.

Interpretive philosophy was adopted as a research strategy using one case study with multiple units of analysis where semi-structured interviews were used as a data collection method. Moments of translation guided the findings and discussions of data collected from conceptualisation to implementation.

The contribution therefore lies in the way in which the concept of moments of translation was applied to study the socio-technical processes in the case studies of *eGovernment* projects. It is arguable that this paper provides a different dimension to understanding and interpretation of failures of *eGovernment* projects, as compared to other researchers involved in similar projects. This contribution is exciting and very developmental to use underpinning theories instead of just relying on literature for government ICT related projects that seek to improve service delivery to citizens, It must be noted that these underpinning theories do not come with a method on how to make use of them. The practical contribution is one of a normative approach which could inform the process of initiating *eGovernment* projects from conceptualisation to implementation and onto post-implementation support.

The practical contribution of this research which encapsulates the entire research effort could serve as a guide for the implementation of *eGovernment* projects to improve service delivery to the public. It is not a “silver bullet” per se and as such does not guarantee successful implementation of *eGovernment* initiatives, but demonstrates the likelihood of increased success. Furthermore, the in-depth and rich social theories and literature available on ICT related projects’ success and failures, and in particular *eGovernment* projects’ success and failures, could facilitate new processes. Hence it is envisaged that this study will address this limitation.

It must be emphasised that the application of moments of translation as a normative approach cannot and will not guarantee success of *eGovernment* projects, but it is expected that its use could increase the likelihood of success.

Another practical contribution is the detailed insight provided by the case study, which revealed that *eGovernment* initiatives in developing countries should be linked to rebranding of key strategic objectives/mandates that all stakeholders can relate to, to drive integration and manage relationships across all parties to be affected by the project.

According to Twum-Darko (2014, p.518), “this will then help increase the social integration of technology initiatives and, hopefully, its institutionalization.”

Each *e*Government readiness factor can be aligned to a specific stage of the actor network. This research has further revealed the iterative approach that can be applied at each stage of the development of the actor network.

7.4 Limitation and further research

One major limitation is the fact that there is very little application of moments of translation as a lens through which to study the challenges impacting on *e*Government related projects in Africa. This has implications for further research work. Although three extensive *e*Government projects were used to provide a general view of the degree of readiness by governments to conceptualise and implement *e*Government initiatives successfully, further research is required to validate it against more *e*Government projects in different regions.

A second limitation is the temptation to transfer these results into other contexts or countries. Although this study was conducted in a region or province of South Africa that won the hosting of the World Design Capital 2014, and as such has certain economic development fundamentals, the methodology and the lessons learnt cannot just be transferred or replicated. Drawing from argument by Twum-Darko (2014), using such a normative approach requires architects of *e*Government projects to be flexible in their thinking and action to make them to identify challenges or the unexpected, in order to improve the iteration process at various stages of the network of aligned diverse interests.

As a final limitation, it must be noted that Moments of Translation were applied in retrospect. It would have been useful to have followed or observed the *e*Government project conceptualization and implementation of government and how the interplay between the actors as role players or stakeholders evolved from the outset.

Finally, capacity and skills problems will continue, governments will continue to reform, and strategic objectives or mandates will be amended to create different pictures. The normative approach to determine the degree of readiness of governments to eGovernment projects is a continuous development and will require minor adjustments to the application of moments of translation as a lens to increase the understanding and interpretation of the likelihood of success.

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Annexure 1

FULL COLOUR THINKING



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GSB/COM/007/2014

Cape Town, 2 June 2014

Nimrod Noruwana
University of Cape Town, Graduate School of Business
Nimrod.noruwana@gmail.com

Dear Nimrod

Re: Ethics Approval

Thank you for submitting your ethical clearance application for your PhD research on
“**Factors Relating to and Impacting eGovernment Readiness in South Africa.**”

This is to confirm that your application has been assessed by the GSB’s Ethics in Research Committee according to the rules and norms of the University and Commerce Faculty, and that it has been approved.

Please note that if you make any substantial change in your research procedure that could affect the experiences of the participants, you must submit a revised protocol to the Committee for approval.

We wish you all the best for your research.

Kind regards,

Prof Ralph Hamann
Research Director

FULL COLOUR THINKING



Accredited by
Association
of MBAs



Annexure 2



Directorate: Research

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REFERENCE: 20140701-32207
ENQUIRIES: Dr A T Wyngaard

Mr Nimrod Noruwana
25 Crawley Crescent
Parklands

Dear Mr Nimrod Noruwana

RESEARCH PROPOSAL: FACTORS RELATING TO AND IMPACTING EGOVERNMENT READINESS IN SOUTH AFRICA: A CASE OF THE PROVINCIAL GOVERNMENT OF THE WESTERN CAPE

Your application to conduct the above-mentioned research in schools in the Western Cape has been approved subject to the following conditions:

1. Principals, educators and learners are under no obligation to assist you in your investigation.
2. Principals, educators, learners and schools should not be identifiable in any way from the results of the investigation.
3. You make all the arrangements concerning your investigation.
4. Educators' programmes are not to be interrupted.
5. The Study is to be conducted from **11 July 2014 till 30 September 2014**
6. No research can be conducted during the fourth term as schools are preparing and finalizing syllabi for examinations (October to December).
7. Should you wish to extend the period of your survey, please contact Dr A.T Wyngaard at the contact numbers above quoting the reference number?
8. A photocopy of this letter is submitted to the principal where the intended research is to be conducted.
9. Your research will be limited to the list of schools as forwarded to the Western Cape Education Department.
10. A brief summary of the content, findings and recommendations is provided to the Director: Research Services.
11. The Department receives a copy of the completed report/dissertation/thesis addressed to:
**The Director: Research Services
Western Cape Education Department
Private Bag X9114
CAPE TOWN
8000**

We wish you success in your research.

Kind regards.
Signed: Dr Audrey T Wyngaard
Directorate: Research
DATE: 01 July 2014

Lower Parliament Street, Cape Town, 8001
tel: +27 21 467 9272 fax: 0865902282
Safe Schools: 0800 45 46 47

Private Bag X9114, Cape Town, 8000
Employment and salary enquiries: 0861 92 33 22
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Annexure 3

The Interview guide

Purpose of the research

This research is towards the completion of my PhD (Business Administration) which I am pursuing through the UCT – Graduate School of Business. The key to this research is to examine the factors influencing eGovernment initiatives by the South African Government to improve services to its citizens, businesses and among itself. The study further determines the degree of readiness of Government in implementing eGovernment initiatives to improve its services.

Questions

Section A: Demographics		
No.	Question	Answer
1	Name of Government Department	
2	Short description of core business	
3	Number of employees in the Department	
4	Number of years in the Department	
5	Participant's designation	
6	Number of years in career	
7	What kind of training relating to this project have you had?	

Section B: Project details			
No	Question	Focus	Answer
8	Name of the project under discussion		
9	How big was the project team		
10	What were the initial project objectives?	<i>Understanding project</i>	
11	What were the sub-goals of the project?	<i>Influences, associations & interactions</i>	
	<i>How were they formulated?</i>		
12	Did the project deliver its objectives?		
	<i>If yes, how long did it take? If no, What was the cause?</i>		
13	Approximately how much money was spent in this project?		
14	What role(s) did you play in the project?		
15	When did the project start and end?		

Section C: Problematisation			
No	Question	Focus	Answer
16	How was this project conceived?		
	<i>How did you hear about the project?</i>		
	<i>Who initiated it?</i>		
	<i>What is their designation?</i>		
	<i>How did the project proceed to its initiation phase?</i>		
17	What was your understanding of the problem that warranted such a project?		

18	What was considered important in making this project a success?	<i>Predictors in Problematization</i>	
19	How did you get involved?		
	<i>How were you informed?</i>		
	<i>Who informed you?</i>		
	<i>Were the objectives clear?</i>		
20	What did you understand the goals and objectives of the project to be?		
21	What were the tools, techniques and methods used to bring out a common vision and understanding of the project objective?		
	<i>How were they viewed by the rest of the project team? (Why this view)?</i>		
	<i>Did this approach work? (Why)?</i>		
22	Did you think you possessed the skills required for the project?		
23	Do you think you were mentally and emotionally prepared for this project?		
24	What was the attitude of the employees & project team about the project?		
25	Do you think your department was ready for this project?		
	<i>What was done to prepare for it?</i>		
	<i>Did it work?</i>		
26	What do you think should have been done in preparation for the project?		

Section D: Obligatory Passage Point			
No	Question	Focus	Answer
27	What was done to ensure all stakeholders were committed to the project?	<i>Predictors in OPP</i>	
	<i>By management?</i>		
	<i>By employees?</i>		
28	What kinds of agreements were entered into in trying to get commitment in the project?	<i>Predictors in OPP</i>	
29	What kinds of changes were made in the department in preparation for this project?	<i>Process Infrastructure as a Predictor in OPP</i>	
	<i>Management systems</i>		
	<i>Data standards</i>		
	<i>Records</i>		
	<i>Work processes</i>		
30	Was the technological infrastructure considered as important in this project?	<i>Technology Infrastructure as a Predictor in OPP</i>	
	<i>At what stage of the project?</i>		
	<i>What was done about that?</i>		
31	Were there any actions that showed commitment to the project?	<i>Success of OPP</i>	
	<i>By management?</i>		
	<i>By employees?</i>		

32	What do you think contributed to the commitment or lack of commitment to the project by the team?		
Section E: Interesement			
No	Question	Focus	Answer
33	Who were invited to attend the first initiation meeting of the project?	<i>Success of Interesement</i>	
	<i>How was the initial vision/objective of the project presented at the meeting session?</i>		
	<i>How was it presented?</i>		
	<i>What was the reactions of the participants</i>		
34	What activities were undertaken to create awareness about the project?	<i>Elements of Interesement)</i>	
	<i>Who initiated them?</i>		
	<i>Did they work?</i>		
	Were you keen on the project? Yes/No	<i>Success of Interesement</i>	
	<i>What contributed to that?</i>		
	<i>Did you get the expected benefits?</i>		
35	Would you say the leadership was effective?	<i>Leadership & Strategic Thinking</i>	
	<i>Did they motivate people to perform?</i>		
	<i>Did they themselves show willingness and ability see the project to the end?</i>		
36	How did the project leader keep the project team interested?	<i>Leadership & Success of Interesement</i>	
	<i>Did it work?</i>		

37	Would you say the stakeholders were convinced about the benefits of the project?	<i>Success of Interestement</i>	
38	What was the general feeling in the department about this project?	<i>Success of Interestement</i>	
39	Are there any factors/people that worked against the moral of the project team?	<i>Contributors to failure</i>	
	<i>How were these dealt with?</i>		
	<i>What was the outcome?</i>		
40	Were there any individuals who were totally against the project and spoke against its success?	<i>Trojan Actors</i>	
	<i>Why did they feel that way about the project?</i>		
	<i>What were their actions & outcome thereof?</i>		

Section F: Enrolment			
No	Question	Focus	Answer
41	Do you think the department employees and other stakeholders had bought in the implementation of the project?	<i>Enrolment</i>	
	<i>Why do you say that?</i>		
	<i>What do you think contributed to that?</i>		
42	Did the project team take ownership of the project?	<i>Enrolment</i>	
	<i>Why do you say that?</i>		
	<i>What do you think contributed to that?</i>		

43	Were the team roles clearly defined?		
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Section G: Irreversibility			
No	Question	Focus	Answer
44	How can you describe the outcome of this project?	<i>Success/failure of the project</i>	
	<i>What makes you think that was the outcome?</i>		
	<i>What do you think are the major contributors to this outcome?</i>		
	<i>Can you discuss your overall experience of the project? (Lessons learned)?</i>		
	<i>How were the objectives of the project met or not by the project process?</i>		
45	How was the project run?	<i>Reinforcement of the network and power</i>	
	<i>How was progress meetings conducted?</i>		
	<i>At what intervals did the project team meet?</i>		
	<i>Who attended the meetings?</i>		
	<i>What reports were they supposed to present to leadership?</i>		
	<i>How did the rest of the team get informed of the outcomes of meetings?</i>		
46	What other form of communication was prevalent in the project network?	<i>Mobilization and Networks of Power</i>	

	<i>Were they effective?</i>		
	<i>Who was in the lead in communication?</i>		
47	Who else were involved in this project network?	<i>Stakeholder Involvement</i>	
	<i>How were they involved?</i>		
	<i>What were their respective roles?</i>		
	<i>How did they go about their responsibilities?</i>		
	<i>How were their interests addressed?</i>		
	<i>At what stage of the project were they involved?</i>		
48	What was done during handover to create awareness to the employees and the public?		<i>Irreversibility</i>
	<i>Was there any involvement of change managers?</i>		
	<i>Was the system demonstrated to the potential users?</i>		
	<i>Were there any roadshows held to create awareness of the system?</i>		
	<i>Was email communication being used?</i>		
	<i>What kind of paper based communications that went to stakeholders?</i>		
	<i>Was the Short Message Service (SMS) made use of?</i>		
49	Was the system used after the project?	<i>Strength of Irreversibility</i>	
	<i>Is it still being used? If not, why?</i>		