


Developing a managerial framework for an e-governance strategy in the Department of Military Veterans

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ABSTRACT

Governments across the globe have embraced the idea and understanding of Information and Communication Technology (ICT) as an enabler to efficient public services. ICT is regarded as the key driver to a digital world and technological transformation. Governments have also started to implement E-Government strategies with an understanding that they will reap benefits such as transparency, effectiveness and embracing of innovation through central points of citizen engagement. The study intended to develop a managerial framework to implement an E-Government strategy framework in the department of military veterans. This was achieved by aligning secondary objectives and the literature review discussed in chapter 2. E-Government strategy embraces the ideology that public services should be at the disposal of the people and the other way around. Online transactions should make it simple and more convenient for citizens to access public services such as online visa applications, and statuses updates. The empirical study found that although there are successful E-Government solutions implemented in South Africa, there is no common framework adopted and developed within the public service. The study further found that there is no collaboration between public entities thus making it difficult to implement E-Government solutions cheaper and at a greater chance of success. The empirical study found that there is a need for a common E-Government framework to be developed and adopted within the South African landscape. A conceptual cloud-based E-Government framework was identified and discussed. This framework is aligned to the national e-strategy requirements and is also in line with local and global legal transcripts, standards and norms.

Keywords: E-Government overview, types of E-Government, stages of E-Government, E-Government benefits, E-Government challenges and inhibitors, Technology Acceptance model, Innovation Diffusion Theory, IT Governance

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LIST OF ABBREVIATIONS

ICT	Information and Communication Technology
IT	Information Technology
CIO	Chief Information Officer
E-Government	Electronic-Government
SITA	State Information Technology Agency
GITOC	Government Information Technology Officer's Council
DMV	Department of Military Veterans
DPSA	Department of Public Service and Administration
EGDI	Electronic Government Development Index
UN	United Nations
NDP	National Development Plan
AGSA	Auditor General of South Africa
SADC	South African Development Council

CHAPTER 1: NATURE AND SCOPE OF THE STUDY

1.1. INTRODUCTION

This study addresses the question of how E-Government strategy is implemented in the South African Public Service. Johnson and Lazar (2010:22) argue that E-Government strategy embraces the ideology that public services should be at the disposal of the people and online transactions should make it simple and more convenient for citizens to access public services such as online visa applications and other government services. The primary objective of implementing E-Government is to enable governments across the globe to improve their internal and external communication capabilities while reducing costs, transparency and accountability (Motubatse, 2016:336). The DTPS white paper (SA, 2016:118), denotes that the Department of Public Service and Administration (DPSA) is responsible for the development and coordination of government's overall E-Government strategy. The DTPS white paper (SA, 2016:119), further argues that the fundamental legislation that regulates E-Government in South Africa is the Public Service Act (No. 103 of 1994 (SA, 1994), and its subsequent amendments. Further that the PSA postulates among others, the establishment of norms, standards, ethics and capabilities relating to the implementation of the E-Government strategy in the public service.

The South African Government is coordinating the implementation of E-Government through other statutory bodies like the State Information Technology Agency (SITA), which is responsible for the acquisition, conformation, implementation and maintenance of ICT infrastructure in the public service (SITA). The Government Information Technology Officers Council (GITOC) is a statutory body consisting of national and provincial CIOs wherein its purpose is to consolidate and facilitate the ICT initiatives in government including E-Government to enable effective service delivery to citizens. Governments across the globe have since embraced the idea and understanding of Information and Communication Technology (ICT) as an enabler in the public service (Breidbach & Maglio, 2015:2). ICT is regarded as a key driver to digitize the world and for technological transformation. Governments across the globe have also started to implement E-Government strategies with an understanding that they will reap benefits such as transparency, effectiveness and embracing of innovation through central points of citizen

engagement (Al-hashmi & Suresha, 2013:45). E-Government strategy implementation facilitates efficient service delivery to citizens by enabling online processing of government services (Rose et al., 2015:351). Mobile networks and web interfaces are the current drivers of business in the private and public sector, without which the society would not be able to make to interact with citizens (Harfouche & Robbin, 2015:316). Despite the efforts of some Public Services department, to implement E-Government, the Auditor-General of South Africa found that the implementation of E-Government remains a challenge The Auditor-General of South Africa (SA, 2015:99). The Auditor-General of South Africa report also states E-Government failed to facilitate the cross-departmental integration of Governments IT assets, impacting Public Services' ability to serve the needs of the South African citizens negatively (SA, 2015:100). The National Department of Military Veterans (DMV) will be the focus of the study. The study will critically assess the difficulties that public service departments experience when implementing E-Governance. The study will further assess success factors, challenges and inhibitors of implementing E-Government in South Africa.

1.2. PROBLEM STATEMENT

The development and implementation of the E-Government strategy in South Africa remain a challenge (SA, 2015:99). E-Government as an enabler and transformational agent of the Public Services and the ICT strategies of the different departments are not sufficiently aligned with the strategic objectives of the South African Government to meet the goals and objectives of the National Development Plan (SA, 2016:38). The Auditor General of South Africa (SA, 2015:99), found that the E-Government strategy framework is not adequately designed to facilitate cross-departmental integration for better service delivery to citizens and has led to fruitless IT expenditure. Most research has embarked on how to implement E-Government strategy in local and national departments. However there is limited research done that deal with inhibitors, challenges and successes of implementing an E-Government strategy. The problem statement of this study is: The current E-Government strategy is not adequately implemented in most of the Public Service departments. As a result, Public Service departments are unable to comprehend the full value of electronic and digitised government. One of the departments that miss this opportunity is DMV.

1.3. IMPORTANCE OF THE STUDY

According to Tummers and Rocco (2015:76), the procedure to implement E-Government in the Public Service is limited, and that there are limited studies on success factors, inhibitors and challenges. Sa, Rocha and Cota (2016:271) argue that there is a need for further studies on identifying potential dimensions for E-Government implementation in the Public Service. Salmi and Hasnan (2016:35) also recommend further research on E-Government strategy and the acceptance of the technology. Salmi and Hasnan (2016:36) further recommend that future studies should have an emphasis on identifying challenges and success factors of implementing E-Government in the Public Service. The literature and empirical evidence gathered in this study is great contribution to the information systems' body of knowledge for future research. The study explored and provided a structured set of categories and criteria for evaluating and implementing E-Government at the DMV. The study provided well-researched insights on factors affecting E-Government and implementations in the Public Service.

1.4 RESEARCH OBJECTIVES

1.4.1 Primary Objectives

The primary objective of the study was to develop a managerial framework to manage the difficulties that public service departments experience when implementing the E-Government strategy.

1.4.2. Secondary Objectives

To achieve this study's primary objective, the following secondary objectives were identified:

- I. To determine E-Government critical success factors at the Department of Military Veterans
- II. To determine challenges of implementing E-Government at the Department of Military Veterans
- III. To determine inhibitors of implementing E-Government at the Department of Military Veterans
- IV. Investigate how E-Government is implemented in South Africa.

1.5 SCOPE OF THE STUDY

This study was conducted in Pretoria, South Africa, at the National Department of Military Veterans. The study is expected to contribute to the information systems body of knowledge by identifying success factors and challenges of implementing E-Government in the South African landscape.

1.6 RESEARCH METHODOLOGY

1.6.1 Contribution of the study

1.6.1.1 Theoretical contribution (Literature)

The literature and empirical evidence on E-Government strategy implementation was conducted with an emphasis on identifying inhibitors, challenges and issues faced by the Public Service when implementing E-Government. The evidence gathered in this study will add to the Information Systems body of knowledge and possibly aid future research.

1.6.1.2 Empirical Research

Landreneau (2015:35), describes sampling strategy as the plan that the researcher set forth to be sure that the sample in the research study represents the population from which the sample was drawn. Landreneau (2015:46) further describes the two major sample designs as follows:

- Probability sampling – Core characteristics of this design is that units are selected from a population at random using probabilistic methods. Types of this sample design are Simple random sampling, Systematic random sampling and Stratified random sampling.
- Non-probability sampling – Core characteristics of this design is that samples are selected based on the subjective judgement of the researcher, rather than random selection. Types of this sample design are Quota sampling, Convenience sampling, Purposive sampling, Self-selection sampling, Snowball sampling.

The study adopted a **non-probability sampling** method. The study further adopted the **purposive sampling** technique utilising the homogeneous sampling method. This is because the units of analysis share common characteristics regarding their occupation and

service in the government sector. The other reason is that the research question is specific to the characteristics of the chosen group.

1.6.2 Research Setting

The research setting refers to the place where data is collected. In this study, data was collected from the National Department of Military Veterans and State Information Technology Agency.

1.6.3 Convenience Method

The study adopted a non-probability sampling method. The study further adopted the purposive sampling technique utilizing convenient sampling technique. The reason is that the method identified is inexpensive and access to the population is manageable and very much possible. The method was also time conscious.

1.6.4 Unit of analysis

The unit of analysis included the following population:

- i. Department of Military Veterans managers and senior managers responsible for sponsoring, evaluating and monitoring the implementation of E-Government
- ii. SITA managers who are responsible for overseeing that SITA delivers on the mandate of implementing E-Government
- iii. SITA E-Government project managers and business analysts (BAs) who are responsible for implementing E-Government projects
- iv. End-users who are using E-Government systems

1.6.5 Data collection methods

Yin (2014:20), alludes that quantitative data and evidence can come from many sources such as documentation, stored records, interviews, direct observations, observing participants and physical artefacts. Yin (2014:33), further describes the data collection strategy as the organised approach of gathering and measuring information from a variety of sources to get a complete and accurate picture of an area of interest.

Table 1.1: Data Collection Strategy

Unit of analysis (POPULATION)	Sample size	Data Collection method
DMV Senior Managers	10	Semi-structured Interviews
SITA Manager	2	Semi structured Interviews
SITA Project Managers	2	Semi-structured Interviews
End-users	30	Questionnaire / Survey
Total	44	

Primary data of this study was collected using semi-structured interviews with managers and senior managers of the Department of Military Veterans and managers from the State Information Technology Agency (SITA). The study further utilised a survey or a questionnaire to gather inputs from the DMV employees and stakeholders. ATLAS and SPSS (V24) software packages were used as data analysis tools in this research.

1.6.6 Recording of data

Data was collected using mixed methods such as interviews and the questionnaire.

- **Semi-structured Interviews**

Semi-structured interviews were used to collect qualitative data. The questions are closely linked to the research problem and research questions. All interviews were recorded.

- **Questionnaire / Survey**

Questionnaires were circulated in the vicinity of all DMV employees and stakeholders. This is due to limited resources such as time, workforce and finances. Questionnaires were used to collect quantitative data. A quantitative approach was used.

1.6.7 Data analysis

The collected qualitative and quantitative data were transcribed using ATLAS and the Statistical Package for Social Scientists (SPSS) for analysis. Both univariate and bivariate analysis was done. During this regression analysis, patterns of relationships between factors were identified together with the correlation between constructs. The Statistician

Consultant was sourced at the North-West University to perform the statistical data analysis.

1.6.8 Data validity and reliability

The validity and the reliability were addressed by using a standardised method of writing notes and interview transcripts. The validity and reliability of the study were processed using content validity criteria, which ensures that adequate coverage of the investigation questions and sub-questions from questionnaires and interviews is maintained.

1.6.9 Ethical considerations

This research was conducted with honesty, objectivity, integrity and confidentiality. All participants were requested to contribute voluntarily as required by the ethics of social research body. All participants were informed about the overall objective of the case study, its main characteristics as well as the risks and benefits of participation. The study adhered to the ethical standards of the North-West University. The study complied with the North-West University's ethics committee requirements.

1.7 LIMITATIONS OF THE STUDY

The study was limited to one national Department of Military Veterans, literature, and provided time frames.

1.8 LAYOUT OF THE MINI DISSERTATION

The mini-dissertation is divided into four chapters, which will be depicted as follows:

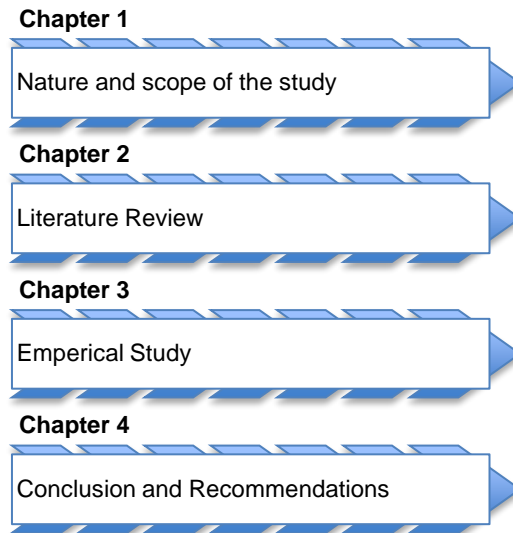


Figure 1.1: Layout of the study

1.9 CONCLUSION

One of the main challenge underlying different E-Government platforms is the provision of quality services to citizens. The quality of service delivery through E-Government should enable governments to effectively communicate with its constituency, save resources (transport costs etc.), improve in transparency and accountability. Since the dawn of civilisation and the inception of globalisation, governments are forced to move with times by transforming the way they do business. The fundamental legislation that regulates E-Government in South Africa is the Public Service Act No. 103 (PSA) of 1994 and its subsequent amendments. The PSA postulates among others; it is responsible for the establishment of norms, standards, ethics and capabilities relating to the implementation of the E-Government strategy in the public service. Therefore, the UN's E-Government Development Index (EGDI, 2016) measures E-Government effectiveness in the delivery of basic economic and social services to people in five sectors, namely education, health, labour and employment, finance and social welfare. It is therefore critical that the South African Government comply with these requirements in implementing the E-Government strategy. This study was conducted bearing these factors in mind.

1.10 CHAPTER SUMMARY

This chapter provided an insight into the problem statement that is derived from the background and literature reviews conducted recently. Primary and secondary objectives were identified and led to research questions. This led to the identification and usage of the research methodology, divided into empirical literature review and resultant empirical study. This encapsulates the research design, unit of analysis, measuring instruments and statistical analysis. Limitations of this study and the layout of the study concluded the chapter. This chapter provided a methodology and approach in which the study should take.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

The traditional administrative activities of the public organisations are mainly manual and require more effort (Layne & Lee, 2001:125). Breidbach and Maglio (2015) argue that the role of ICT in service innovation remains unclear and investigating its implications in the current global cloud environment signifies a top research priority for the progression of service innovation. ICT is regarded as a key driver to digitise the world and for technological transformation. Governments across the globe have also started to implement E-Government strategies with an understanding that they will reap benefits such as transparency, effectiveness and embracing of innovation through central points of citizen engagement (Al-hashmi & Suresha, 2013:41). Botha (2012:24) indicates that the “IT service delivery departments in all sectors are currently characterised by non-traditional activities: Ten years ago IT support departments still prescribed the hardware and software users had to use, but in recent years new and rapidly evolving content management, collaboration, social business and mobile technologies, as well as increased demand from users to access enterprise content from anywhere and at any time, have forced IT support departments to rethink their service delivery strategy and explore innovative means to comply with governance requirements.” For E-Government to be successfully implemented, IT service delivery requirements and demands like strong ICT infrastructure and support should be realized. This concedes with the above assertion from Botha (2012:24).

This study attempts to pave a way forward in developing a managerial framework for implementing E-Government in the South African Public Service. This study will also attempt to identify critical success factors, challenges and inhibitors of implementing E-Governance in the Public Service. The purpose of this chapter is to perform a theoretical and thematic literature research directed at E-Government strategy implementation. The chapter defines what E-Government is, the rationale to implement it and how E-Government is implemented in the public sector. The literature will also discuss challenges and critical success factors in implementing E-Government. The literature contained in this chapter will also link E-Governance with IT governance.

2.2 E-GOVERNMENT OVERVIEW

The World Bank (2000) broadly defined E-Government as the “use by government agencies of information technologies (such as Wide Area Networks, the internet, and mobile computing) that can transform relations with citizens, businesses, and other arms of government”. The World Bank (2000), further argues that E-Government technologies can serve a variety of different ends such as better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, less corruption, increased transparency, greater convenience, revenue growth, and/or cost reductions. Means and Schneider (2000:21) define E-Government as the relationships between governments, their customers (businesses, other governments, and citizens), and their suppliers (again, businesses, other governments, and citizens) by the use of electronic means. Similarly, Duffy (2000) defines E-Government as using information technology to deliver government services directly to the customer 24/7. Brown and Brudney (2001) further define E-Government as the use of technology such as web-based applications to improve access to government information and to efficiently deliver government services.

West (2001) also defines E-Government as the delivery of government services and information electronically using the Internet. Jeager (2003:325) provides a technical point of view that E-Government is a government of new technologies that simplify and automate transactions between itself and its constituents, businesses and other government entities. Almarabeh and AbuAli (2010:30), also define E-Government as the use of Information and Communication Technologies to offer citizens and businesses the opportunity to interact and conduct business with government by using different electronic media such as telephone touchpad, fax, smart cards, self-service kiosks, emails/internet. Scholl (2015) further defines E-Governance as the use of information and Communication Technology (ICT) to support government functions and services and also to enable citizens to access services online, participate in government activities and processes. The definitions and literature above differ slightly however they all have common priorities such that, E-Government is aimed at automating government activities, processes and systems to simplify and deliver social services to its citizens. The literature further suggests that if E-

Government projects are implemented successfully, there will be better transparency, accountability and governance in the public service. For this study, E-Government is defined as the use Information and Communication Technology (ICT) such as the internet, wireless capability, cellular telephone and web applications to enable efficient and effective access to government information and services while enabling governments to be more accountable and transparent.

2.2.1 Types of E-Government (E-Government Models)

Alshehri and Drew (2010:80) argue that E-Government services differ according to user's needs and requirements. As a result, this diversity has given rise to the development of different E-Government types. Table 2.1 depicts different types of E-Government.

Table: 2.1 Types of E-Governments

Parties of Communication	Content	Dominant Characteristics	Definition	Example
Government-to-Government (G2G)	Government Information and Services	Communication, coordination, standardisation of information and services	E-Administration	Establishing and using a common data warehouse
Government-to-Citizen (G2C)		Communication, transparency, accountability, effectiveness, efficiency, standardisation of information and services, productivity	E-Government	Government organisation Web Sites, e-mail communication between the citizens and government officials
Government-to-Business (G2B)		Communication, collaboration, commerce	E-Government, e-commerce, e-collaboration	Posting government bids on the Web, e-procurement, e-partnerships
Government-to-Civil Society Organisations (G2SC)		Communication, coordination, transparency, accountability	E-Governance	Electronic communication and coordination efforts after a disaster
Citizen-to-Citizen (C2C)		Communication, coordination, transparency, accountability, grassroots organisation	E-Governance	Electronic discussion groups on civic issues

Source: Alshehri and Drew (2010)

These concepts will be discussed in detail below.

2.2.1.1 Government-to-Citizen (G2C)

Alshehri and Drew (2010:80) further contend that the majority of government services come under this type of E-Government, which is aimed at providing citizens with electronic capabilities for accessing government information and services in real-time. Ndou (2004:10) further indicate that the primary role of E-Government is to help the citizens to facilitate the efficient citizen interactions with government by making public information more accessible through websites, which by its nature will reduce costs and time. SARS (e-filing) and DMV online are examples of literature on examples.

2.2.1.2 Government-to-Business (G2B)

Moon, Welch and Wong (2005) indicate that the government-to-business (G2B) E-Government type is as useful as the G2C system, enhancing the efficiency and quality of communication and transactions with business. Also, it increases the equality and transparency of government contracting and projects. Moon *et al.* (2005:3) further argue that the services offered through G2B transactions play an important role in business development with an emphasis on the small and medium enterprises. Khatoun and Zeadally (2016:48), note that G2B is a second major type of E-Government category, which can bring the significant efficiencies to both governments and businesses. Alshehri and Drew (2010:80) indicate that business transactions between government and business through G2B includes distribution of policies, rules and regulations and that business service offerings include accessing business information online, update on new regulations to businesses online, downloading of application forms, lodging taxes online, renewing licenses online, registering business online, obtaining business permits online and many others. This concept is appropriate in the South African landscape because of the current downgrades of our economy. If Government and business communicate effectively through online, reliable technologies, small business will get enough support from government and jobs will be created.

2.2.1.3 Government-to-Government (G2G)

Alshehri and Drew (2010:9) describe G2G as the “online communications between government organisations, departments and agencies based on a super government

database.” Ndou (2004:4) further indicates that the efficiency and efficacy of processes are enhanced by the use of online communication and cooperation, which allows for the sharing of databases and resources including skills and capabilities. Hamilton (2010:7) also notes that the use of Information and Communication Technology (ICT) by different agencies or governments to share or centralise information or to automate and streamline intergovernmental business processes such as regulatory compliance has tremendous benefits of time and costs savings. This concept is appropriate in the South African landscape because there is a huge misalignment between state-owned entities and government. This is evident in some state-owned entities resulting in fruitless and wasteful expenditure in excess of billions of Rands. If Government and state-owned entities communicate effectively through online, reliable technologies, billions of Rand will be saved and be channelled to proper service delivery.

2.2.1.4 Government-to-Employee (G2E)

Curtin (2007:10) argues that G2E refers to the relationship between government and its employees only and that its purpose is to serve employees with online services such as leave management, personal development plans, and salary records for example. Ndou (2004:18) notes that G2E provides strategic and tactical mechanisms for the development of government goals and programs. This concept is appropriate in the South African landscape because at the moment there is a huge perception that government employees are not adequately skilled in dealing with the current challenges the South African government is facing. If there is an appropriate, effective and efficient transition between employees and government, pro-active measures like skill shortage can be early determined and dealt with.

2.2.2 Stages of E-Government

This section reviews the stages of implementing E-Government as available in the current literature. The research will examine the stages defined by Gartner Research, the United Nations and the World Bank. At the end of this section, the study will critique, compare and critically analyse the stages.

2.2.2.1 Mckinsey 2009 – E-Government 2.0

Baumgarten and Chui (2009) through the Mckinsey research house argue that the ineffective and complex governance processes present a central impediment to implementing E-Government successfully. Baumgarten and Chui (2009:2) further argue that most government agencies lack necessary capabilities and resources to develop and improve E-Government tools like web services, while the private sector, on the other hand, employs best specialises in talent to adapt and optimise critical business transactions. The Mckinsey research through Baumgarten and Chui (2009:3) contends that implementing E-reliable information to citizens at great ease, low cost and will even offer more functionalities and content to citizens. Baumgarten and Chui (2009:4) suggest that creating new governance models is central to implementing E-Government successfully. Business and Government executives should be responsible and accountable for driving E-Government through web services. Baumgarten and Chui (2009:4) further recommend that governments should follow a structured approach to evaluate critical infrastructural, security and management issues. Baumgarten and Chui (2009) also illustrate the scorecard that can help governments rate their web capabilities and identify areas of investment. This is shown in Figure 2.1 below. Lastly, Baumgarten and Chui (2009:6) recommend that IT security systems and policies be aligned to globally accepted standards as most of these policies are already developed and implemented in the private sector. Therefore, the South African government could use the research conducted by Baumgarten and Chui (2009:7) to streamline the technology gap between the Private Sector and the Public Sector. They can also rate their level of capabilities before investing resources on E-Government using the exhibit from Figure 2.1.

2.2.2.2 Four Stages – Gartner Research

Gartner (2000) defined and identified four phases of the E-Government Model to measure the progress of E-Government initiatives and to establish a roadmap to achieve identified goals of implementing E-Government.

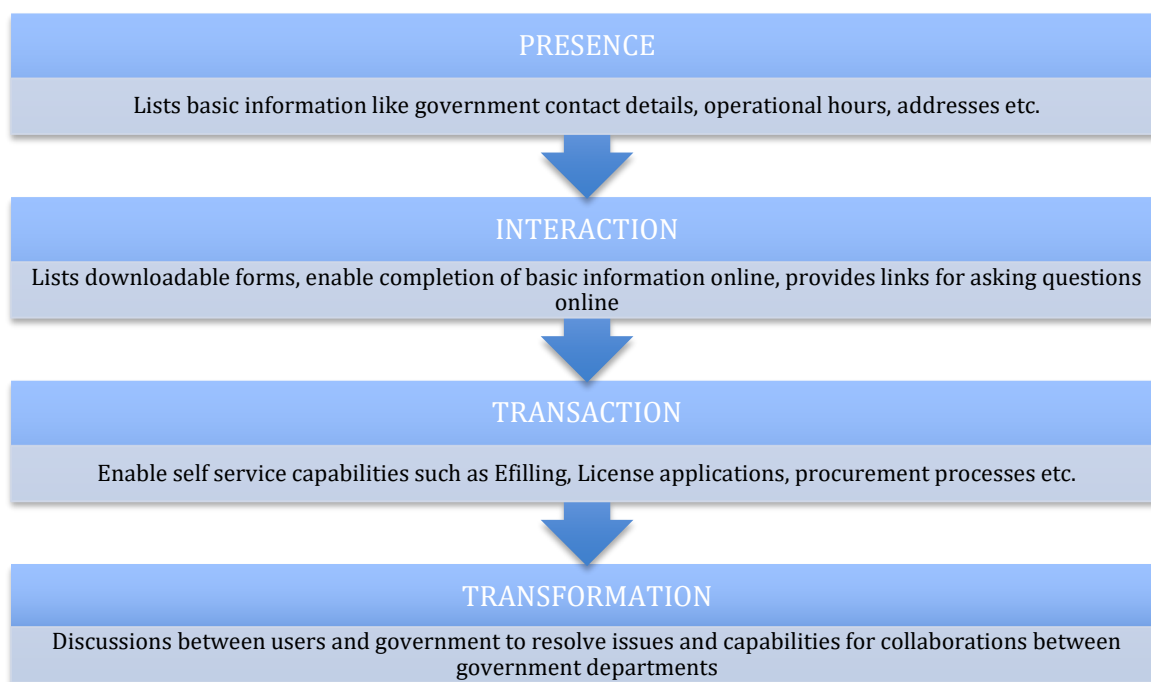


Figure 2.1: Gartner's four phases of the E-Government Model

Source: Gartner (2000)

2.2.2.3 Five Stages – United Nations (UN)

The United Nations Benchmarking E-Government Global Survey of 2001 identified five phases of implementing an E-Government Strategy.

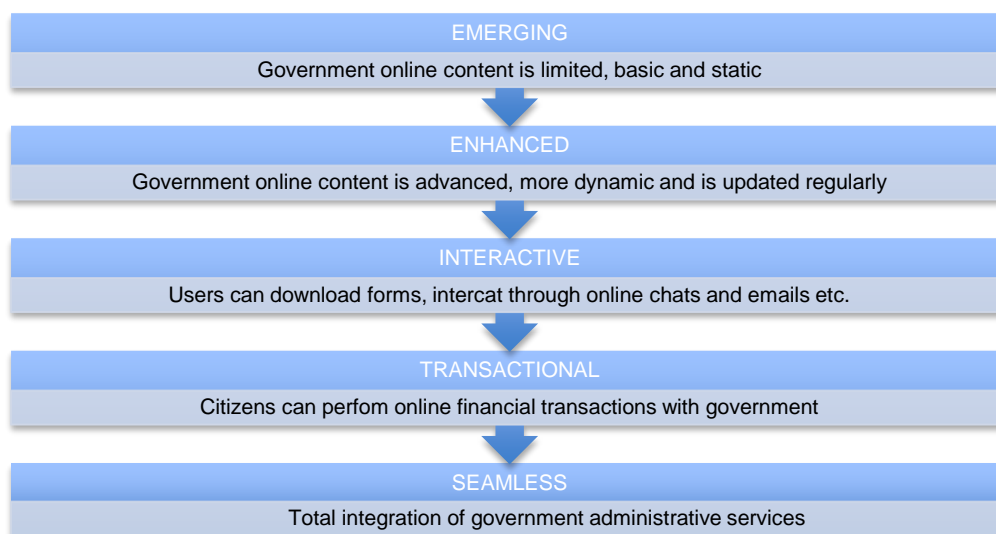


Figure 2.2: UN's five phases of E-Government Model

Source: UN (2001:2)

2.2.2.4 World Bank Study of three Stages – World Bank

The World Bank (2002) identified three phases of implementing E-Government to assist decision and strategy makers in devising their plans. The research conducted by the World Bank (2002) notes that the stages are not dependent on each other nor need one phase to be completed before another one can begin.

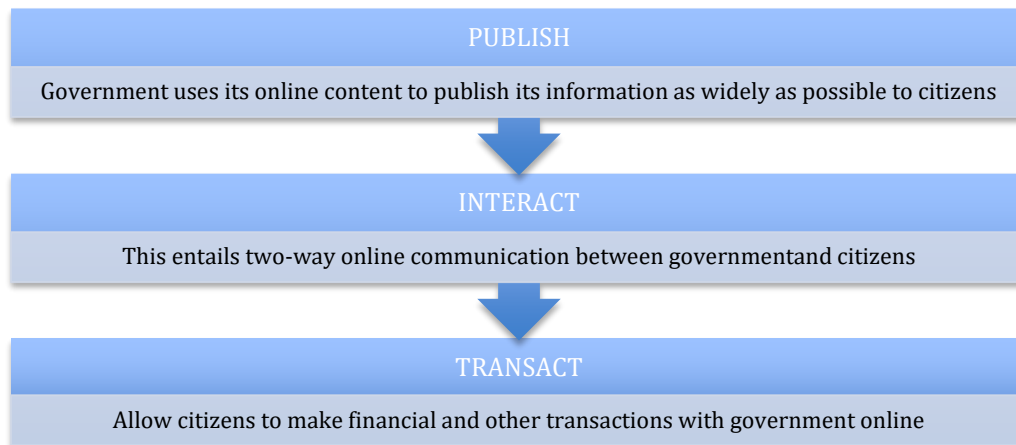


Figure 2.3: UN's five phases of E-Government Model

Source: UN (2001:4)

The section above discussed different models that are researched and implemented across the globe, however, if we look at the South African landscape, a suitable model will need to be implemented. In this regard, a mixture of these phases is applied to the South African government. This is because there is a white paper on ICT policy that talks about implementing E-Government. The South African government have major infrastructure challenges hence the mixture of these phases will be applicable. The stages or phases identified above will be further critically analysed in the section below.

2.2.3 Critical analysis and Comparison between E-Government Stages

Different sources discussed in the previous section proposed different E-Government models and stages. Notwithstanding the differences regarding the number of stages, there are many similarities in these stages. The first stage represented in all sources indicated that government is providing information to its citizens online and easily despite the fact that it is labelled differently, e.g. publish, emerging and presence. It is further noted that the other common stage is the one where all transactions are done electronically or online.

This stage also uses different names, such as transact, transactional and transaction. On the other hand, there are some differences noted between these stages. The enhanced stage is stated by only two sources wherein the importance of the Internet is emphasised when implementing E-Government. In conclusion, Alshehri and Drew (2010:80), argue that there is no specific number of stages of E-Government since it is different from one researcher to another and that there is vast diversity in technological, social stance and political reasons. Therefore, E-Government implementation is not a one-step process although it involves multiple stages to be implemented.

2.3 E-GOVERNMENT BENEFITS

In recent years, Information and Communication Technology (ICT) has played a critical role in digitising the world and has now become one of the core fundamentals of managerial reform around the world (Wangpitwong et al., 2008:56). Ndou (2004:3), argues that the E-Government initiatives are designed to reduce bureaucracy such as long processes in decision making, enable online and real-time access to government information and services which enhance the quality of services through engaged decision making. Aggelidid and Chatsoglou (2008:120) also argue that E-Government is a necessary component in the modernisation of any government because it assists in enhancing transparency, accountability and good governance, further making governments more result-oriented, effective and citizen-centred. Nkwe (2012:41) further allude that E-Government through information and Communication Technology (ICT) is capable of affecting organisational structures, business processes and business objectives and further result in huge cost savings. Anthopoulos, Reddick, Giannakidou and Mavridis (2016:162), contend that governments are striving to utilize Information and Communication Technology (ICT) to be effective and efficient in delivering services and information to citizens, to be more accountable and transparent regarding their processes, to be more open when it comes to citizen engagement in policy decisions and to be more approachable in customer services. Wang and Rubin (2004:363) further identify E-Government benefits as follows:

- Reduction of time, effort and costs for citizens;
- Service delivery improvement;
- Increased satisfaction from citizens;

- Increased usage of the computer which will increase the knowledge of ICT and internet; and
- Access to information, which might create new businesses and opportunities.

Also, Anthopoulos et al. (2016:162) outlines the following advantages:

- Improved transparency, accountability and accuracy of information;
- Improves government's efficiency in disseminating information; and
- Enhances sharing of information among government departments and agencies.

It is clear that E-Government bears more fruitful benefits if implemented accordingly. The research identified above note common factors like efficiency, transparency, effectiveness, cost savings, accuracy, accountability which is more of what the South African government needs at the moment.

2.4 CHALLENGES OF IMPLEMENTING E-GOVERNMENT

Alshehri and Drew (2010:82), argue that there are several challenges that can delay progress towards implementing E-Government and that the complexity of E-Government initiatives might lead to a wide range of challenges and issues such as misalignment of requirements, change management and user acceptance. Anthopoulos et al. (2016:164) further identify the following common challenges of realizing the promise of E-Government as ICT infrastructure, Security and privacy, Policy and regulations issues, lack of desired skills set, lack of appropriate partnerships and collaborations, digital divide, Culture, Leadership and management support. The implementation and rollout of the E-Government project depend and requires that governments have strong technology infrastructures (Sharma & Gupta, 2003:15). Linders (2012:447) argues that for governments to deliver E-Government services effectively, they must develop an effective telecommunication infrastructure framework that will address the various infrastructure requirements. Breidbach and Maglio (2015:5) further contend that for governments to improve their understanding of today's global, digital, service-oriented economy, new theoretical lenses and perspectives are necessary. Lusch and Nambisan (2014:157) agree with Breidbach and Maglio (2015:6) and further point out that this is critical especially when one wants to study the impact of ICT on service delivery and innovation. Anthopoulos et al.

(2016:171) and the World Bank (2015:4) showed in their research that the majority of public sector ICT implementations in the least developing countries were either partial or total failure due to various issues including ICT infrastructure. Takabi, Joshi and Ahn (2010:396) note that Data privacy refers to the facet of data integrity capability that focuses on organisations making sure that their information is secured and is not shared among third parties with no proper level of protection and approval. Layton (2007:9) on the other hand argues “security of information means protection of information and systems against accidental or intentional disclosure of unauthorised access, unauthorised modifications or destructions”.

Table 2.2 below identifies and critically explains common challenges of implementing E-Government globally. In the South African fraternity, these challenges are relevant especially with the exorbitant cost of data, lack of adequate ICT infrastructure, lack of proper ICT policies that govern Cyber Security, lack of transparency, workforce issues and trust issues remain to be some of the challenges.

Table 2.2: Challenges of implementing E-Government

Challenge	Summary
ICT Infrastructure	All countries implementing E-Government have struggled to develop a basic infrastructure to take advantage of new technologies and communications tools. Many developing countries, even if possessing the will, do not have the infrastructure necessary to deploy E-Government services throughout their territory immediately
Law and Public Entity	The application of Information Technology and Communication (ICT) to the government may encounter legal or policy barriers. Legislatures must ensure that laws are updated to recognise electronic documents and transactions. Policymakers implementing E-Government must consider the impact of law and public policy
e-Literacy	e-Literacy refers to marginalised groups who are unable to make use of information and communication technologies because they are not computer literate. With the digital revolution, there is a very real danger that the world will be divided into the “information rich” E-Government has the potential of either equalising access to government and its services or increasing the barriers to participation
Accessibility	Governments must serve all members of society irrespective of their physical capabilities (disabled people: those who are blind, deaf or otherwise handicapped). Online services will have to be designed with appropriate interfaces
Trust	To be successful, E-Government projects must build trust within agencies, between agencies, across governments, and with businesses, NGOs and citizens.
Privacy	Governments must be responsible custodians of the enormous amounts of personal information they hold. Governments collect vast quantities of data on their citizens through everyday transactions. Protecting the privacy of citizens’ personal information stored on these databases while making effective use of the information contained in them is a vitally important issue
Security	Security is costly, but must be addressed in the design phase, as security breaches can shatter public trust in E-Government. Trust is a vitally important component of E-Government projects. Without trust, citizens who may already be wary of using technology and may avoid and even shun the use of online services that ask for detailed personal information.
Transparency	Citizens too rarely understand how government decisions are made. This lack of transparency prevents the public from actively participating in government and from raising questions or protesting unfair or ill-advised decisions. A lack of transparency can conceal official graft or favouritism
Interoperability	Putting incompatible record formats online neither simplifies nor reduces the workload imposed on people and government officials. Reliable E-Government requires a comprehensive overhaul of legal systems.
Records Management	Better information management can help officials identify barriers to more efficient government. An information management framework is necessary to make sense of available data. Without this framework, policy-makers could not derive useful analysis quickly enough to react to social and economic developments
Permanent availability and preservation	Historical documentation is of special importance for governments. ICT not only allows for quick and cheap dissemination of data but also for its compact and convenient storage
Education and Marketing	E-Government services are only useful if people know about them. Education and outreach programs will be needed
Public/Private competition/colaboration	Answering the question of where government controls end and the private sector takes over in E-Government efforts.
Workforce issues	Human resources must be structured and managed with E-Government goals in mind. A well-trained and motivated workforce is critical to E-Government success
Cost structures	While planning and budgeting in a changing climate are difficult, governments should seek to invest in sustainable programs that can produce savings.
Benchmarking	Governments must regularly evaluate the progress and effectiveness of their E-Government investments to determine whether stated goals and objectives are being met on schedule

2.5 INHIBITORS AFFECTING THE FAILURE OF E-GOVERNMENT

Dada (2006:2) argues that the problem that often arises when implementing E-Government in developing countries is that there is frequently a mismatch between the current and future business applications. The large gap identified in the physical, cultural, economic and various other contexts between the software designers and the place it is being implemented is identified as a major inhibitor. The table below will summarise common inhibitors found when implementing E-Government globally.

Table 2.3: Inhibitors of implementing E-Government

Inhibitor	Explanation
Organisational Power	Organisation structure and relations
Politics	Government and top-level leaders' commitment, and appropriate political support
Education	Appropriate skills for project operation and acceptance as well as execution of training activities
Project Management issues	Underestimate of timeline; weak definitions of requirements and scope; inefficient risk analysis and management; unsuccessful monitoring and measurement
Ambiguous business needs and unclear vision	Project's objectives are not clear or justified for their necessity
Security and privacy	Project products do not secure transactions and sensitive information
Finance and operational costs	Problems about infrastructure, data, compatibility
ICT and system development process	Problems about infrastructure, data, compatibility, information management

Source: Anthopoulos, Reddick, Giannakidou and Mavridis (2016:164)

The inhibitors identified above in Table 2.3 are relevant to the South African Fraternity. The Auditor General of South Africa in his 2016 report indicated that most government departments and state-owned entities lacked adequate organisational structures. There are challenges with Government ICT policies as they do not address critical security, operational and governance issues. This is recorded in the recent Government Technology CIO forum which also indicated that the South African government spend way too much on ICT while there is no value for money.

2.6 TECHNOLOGY ACCEPTANCE MODEL (TAM)

Agag and El-Masry (2016:99) contend that the TAM theory suggests that individuals' perception about ease of use and usefulness are two cognitive factors that determine their acceptance of new technology. Ayeh (2015:176); Kim, Kim and Shin (2009:27) argue in their research that TAM is considered to be the most effective approach to investigate users' acceptance of new technology. The TAM was initially proposed by Davies (1986:325).

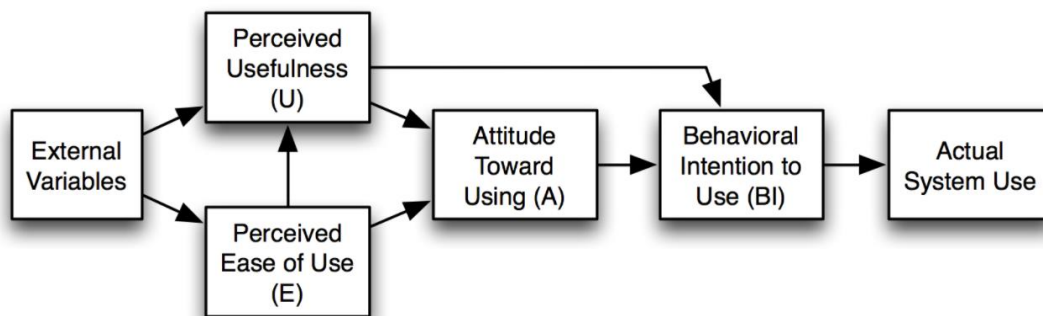


Figure 2.4: Technology Acceptance Model

Source: Davis, Bagozzi and Warshaw (1989:982)

Therefore, the Technology Acceptance Model proposed by Davis et al. (1989:983) appears to be the most widely used innovation adoption model. Mohammadi (2015:360) and Agag, Ahmed and El-Masry (2016:99) supplement the argument by indicating that TAM has been used in a variety of studies to investigate the factors associated with users' acceptance in using new technology. The TAM has received extensive empirical support in explaining user acceptance of new technological innovations. This model is critical when implementing ICT applications and systems, especially in the South African landscape. This is because AGSA (SA, 2016:99) identified lack of IT Governance control within the public service. This has also a bearing on trade unions in the South African landscape, where all systems and processes implementations need to be communicated and accepted by users.

2.7 INNOVATION DIFFUSION THEORY

Innovation Diffusion Theory (IDT) is a well-known theory proposed by Rogers (1983:22) to investigate user technology acceptance. Rogers (1993:11), defines innovation as “an idea, practice, or object that is perceived as new by an individual or another unit of adoption”. Bartel and Garud (2009) also define innovation as the process of creating and combining ideas to establish a relationship between present efforts and past experiences to solve future problems. Fagerberg (2016:107) argues that there are many definitions of innovation. However the most common characteristic is that something new and different should have an impact on the society to be regarded as an innovation. Rogers (1983:5) defines diffusion as “the process by which an innovation is communicated through certain channels over time among the members of a social system”.

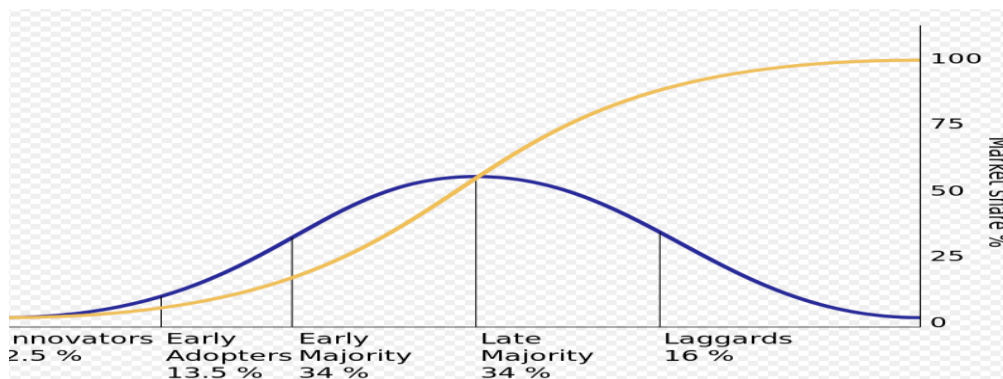


Figure 2.5: Innovation Diffusion Theory

Source: Rogers (1983:22)

Argawal (2000:90) therefore makes a point that IDT influences the way in which users decide to adopt or reject an innovation based on their beliefs and perception they form about the innovation. Lu, Yang Chau and Cao (2011:394) argue that IDT provides factors that influence consumers' intent to adopt new technologies and that these factors are relatively advantageous compatibility, complexity, trialability and visibility. Agag, Ahmed and El-Masry (2016:100) supplement Lu et al. (2011:396) researched in that relative advantage and compatibility have provided the most constant explanation for consumer intention to adapt to new technologies. South African technology users according to Ndou (2004:34) are reluctant to accept innovations and further the level of IT literacy in the country is far way less than most third world countries. E-Government brings about

innovations, however, it is also important that the innovations are widely accepted by end-users. Technology can provide all necessary capabilities, however, if end-users do not align with the development, the innovation is not accepted, this might be rendered as a big blow and great financial loss.

2.8 IT GOVERNANCE

As a corporate governance control, an IT governance framework known as the “Corporate Governance of Information and Communication Technology Policy Framework”, was developed and endorsed by the South African Government as a mandatory control for all Public Services departments and state-owned companies (Public Service Corporate Governance of Information and Communication Technology Framework, 2012:3). The IT above governance framework has at the purpose to facilitate cross-departmental integration and alignment of the government-owned IT and Information System (IS) assets. Despite the efforts of some Public Services departments, to implement the framework above, the Auditor-General of South Africa (AGSA) found that the implementation of the IT Governance framework remains a challenge (SA, 2015:99).

The Auditor-General of South Africa (2015), the report states that IT governance failed to facilitate the cross-departmental integration of Governments IT assets, impacting Public Services’ ability to serve the needs of the South African citizens negatively (SA, 2015:99). The inception of IT Governance research is mostly based on IT efficiency and effectiveness in the business world (Brown & Magill, 1994:371; Sambamurthy & Zmud, 1999:267). The transition has now emerged to recent research where researchers are focusing on the impact of implementing IT governance (Ali & Green, 2012:179; Bradley et al., 2012:157; Prasad, Green & Heales, 2012:199; Njenge, 2015:ii; Ping-Ju et al., 2015:499; Van Grembergen & De Haes, 2017). Ping-Ju et al. (2015:502) indicate that “there are different definitions of IT governance, but IT governance mechanisms in general consists of structures, processes, and relational mechanisms to enhance business/IT alignment and the research upholds positive associations between IT governance mechanisms and governance performance.” Therefore, IT Governance adoption is relevant to the South African Government. This is because of billions of Rand that are invested on ICT projects realise no value for money. IT Governance provides a framework that contains

structures and charters that define roles and responsibilities of senior management, ICT committees, ICT budget control subcommittees and programs. This is important in managing and directing ICT investments. Gerrard (2010:2), describes IT governance as the process that guarantees that there are effectiveness and efficiency use of IT in the organisation. Chong and Tan (2012:33), describe IT Governance as a framework that assists management in decision making on IT related issues and further define roles and responsibilities according to the approved governance charters.

2.9 MANAGERIAL IMPLICATIONS

Managerial implications in this study will summarise the literature results in terms of actions, in other words, compare the action, and indicate what action or non-action should be taken in response of resolving the research objectives.

Based on the literature above, many authors on E-Government agree that there is a need for a common and central managerial framework to be developed to allow synergy between public organisations. The study further noted great successes of E-Government implementations here in South Africa and in the globe. Although there are certain public entities that have registered great success in implementing E-Government, there is still a lack of a central government managerial framework that is cloud based. The study has recorded several common challenges and inhibitors of implementing E-Government in South Africa and the globe. These challenges are structural, behavioural, political and infrastructure related. The study has indicated the need to identify and manage the risks associated with these challenges. The study will further suggest a central approach of implementing E-Government solutions, this will minimise duplicated efforts in government and save money. The literature lastly looked at how E-Government is implemented in South Africa. The literature found that there are no sufficient collaborations between government organisations. The literature further noted some successes of automating government processes, however there is a huge gap between those who failed and those who succeeded. The study further noted a lack of central management of E-Government projects to leverage on costs and experiences.

2.10 CONCLUSION

Literature has shown that E-Government strategy implementations have great potential to improve government operations, functions and activities to be more optimally, effective and efficient. Literature has further shown that E-Government is not just a tool to save costs but rather a tool that can transform governments to be more transparent with their citizens. Therefore, E-Government is not just about automating government processes, procedures or functions, but more about changing the way in which governments conducts its business and services (World Bank, 2015:7). Citizens are considered to be customers to governments. Therefore governments should strive to build more positive relationships with them. E-Government if implemented adequately can facilitate such requirement. It is also noted that adequate skills and resources are required to implement E-Government successfully. It is also noted that Government should focus on educating citizens about E-Government to avoid inhibitions and thus make it easy for users to accept the new technology. The government should also invest more in the ICT infrastructure and promulgate adequate ICT policies.

2.11 CHAPTER SUMMARY

In this chapter, various concepts relating to E-Government were defined and discussed. The chapter also identified and discussed E-Government challenges and further compared them with the South African Landscape. The chapter identified and discussed inhibitors of implementing E-Government in the global landscape and further discussed those that are relevant to the South African society. The chapter identified critical success factors of implementing E-Government globally and within the South African landscape. The chapter further identified Innovation and technology acceptance models, which are widely used in the information system body of literature and system implements. These models were discussed and aligned with the South African public service landscape, operations and norms. The Chapter lastly discussed IT Governance as it relates globally and its readiness within the South African landscape taking into account KING IV differentiation of Corporate Governance and IT Governance.

CHAPTER 3: RESEARCH METHODOLOGY AND FINDINGS

3.1 INTRODUCTION

The literature review discussed in chapter two outlined an overview of E-Government, discussed the types of E-Government models and the stages or phases of adopting and implementing E-Government. The literature further discussed the benefits of having E-Government implemented and further looked at challenges of implementing E-Government from a global and South African perspective. The literature further diagnosed critical inhibitors responsible for failure when implementing E-Government. The literature identified a Technology Acceptance Model (TAM) and aligned it to the South African public service examining the Innovation Diffusion Theory (IDT). These two principles (TAM and IDT) also evaluated the impact of change management when E-Government innovations are deployed and implemented. Lastly, the literature review on chapter two further discussed what IT governance is, its alignment to E-Government with regards to KING IV and its implications to the E-Government managerial framework. The emphasis on this chapter was on the research methodology applied, to assist in reaching the desired study objectives set out in chapter 1. Thorough investigation procedures, data analysis and results are described in this chapter. All statistical analyses were done by the Statistical Consultation Services at the North-West University, Potchefstroom campus, using ATLAS and SPSS (V24).

3.2 SCOPE OF THE QUANTITATIVE RESEARCH

The empirical study focused on the National Department of Military Veterans within the South African Public Service. The study identified business managers within the Department of Military Veterans and the State Information Technology Agency as respondents to establish if the current IT strategy involves projects aligned to E-Government, identify benefits, challenges and inhibitors of implementing E-Government and identifying managerial implications of implementing E-Government. The study further attempted to test the alignment of IT Governance within the Public Service. The semi-structured interviews attempted to measure the following items:

- Perceived usefulness;
- Ease of use;

- Challenges;
- Inhibitors;
- Success factors;
- User readiness;
- Role of ICT;
- Role of SITA;
- Role of DMV Management;
- IT Governance; and
- Collaboration efforts among public entities.

This exercise aimed to test and align the research objectives identified in chapter one of the literature review done in chapter two. The research intended to identify challenges, inhibitors and critical success factors of implementing E-Government. The research further intended to examine the role of ICT teams, DMV management and SITA with regards to the implementation of E-Government solutions.

3.3 SCOPE OF THE QUALITATIVE RESEARCH

The study identified respondents within the National Department of Military Veterans (DMV) who are directly and indirectly involved with E-Government projects. Respondents were asked to identify critical ICT services if they are aligned with the business strategy if ICT is effective and efficient and lastly the implications of implementing E-Government projects. Responses and comments were analysed in a qualitative approach to add value to the results and outcome of this research. The questionnaire (quantitative) attempted to measure the following marking instructions for the E-Government strategy implementation:

- E-Government readiness;
- IT Governance Framework;
- Perceived usefulness;
- Challenges of implementing E-Government; and
- Inhibitors of implementing E-Government.

The research identified five constructs that are linked to the study objectives and the literature review conducted in chapter two. Each construct was measured against relevant objectives of the study.

3.4 SAMPLE GROUP AND SIZE

Welman, Kruger & Mitchell (2010:55) define population as the total group of potential participants in a research study at which the researcher generalises the results of an empirical study. This study adopted both quantitative and qualitative methods in which 31 questionnaires were completed and received while 15 managers were duly interviewed. Landreneau (2015:1) defines sampling strategy as the plan that the researcher set forward to make sure that the sample in the research study signifies the population from which the sample was drawn. In this study, a case study strategy will be followed based on the work of Yin (2009:34).

Sampling:

Landreneau (2015:1), further describes the two major sample designs as follows:

- Probability sampling – Core characteristics of this design is that units are selected from a population at random. Types of this sample design are Simple random sampling, Systematic random sampling and Stratified random sampling.
- Non-probability sampling – Core characteristics of this design is that samples are selected based on the subjective judgement of the researcher, rather than random selection. Types of this sample design are Quota sampling, Convenience sampling, Purposive sampling, Self-selection sampling, Snowball sampling.

The study adopted a **non-probability convenience sampling** method. The study further adopted the **purposive sampling** technique utilising the homogeneous sampling method. This is because the units of analysis share common characteristics regarding their occupation and service in the government sector. The other reason is that the research question is specific to the characteristics of the chosen group. It would have been very difficult for the researcher to reach all employees and managers within the National Department of Military Veterans hence the author opted to use the sampling method

identified above. The sample size calculations are achieved by using the following formulae when random sampling is used:

Equation 3.1. Sample size

$$\eta = \frac{Z^2 \pi (1 - \pi)}{e^2}$$

Where: η = the sample required for the given parameters
 Z = the number of standard deviations for the given accuracy
 π = the proportion of sample of interest (0.5 maximises the sample size, thus minimising the error)
 e = error allowance

Since the author used the **non-probability convenience sampling** method in this study, the usage of this equation above is not relevant (Welman *et al.*, 2010:67). The population selected was well represented because all position grades of employees affected by E-Government were selected. Forty-five (45) questionnaires were printed and given to potential respondents. However only 31 were returned for analysis. Out of 31, only 30 were analysed, and one was discarded because of the incompleteness of data and its integrity. The **response rate was recorded at 69%** for questionnaires. For the interview, 20 managers were identified and invited to participate in this research. However only 15 responded while the other five could not make it. Therefore **75% response rate** was recorded for the semi-structured interviews. It is evident that this time of the year, most public servants especially managers are extensively engaged with the finalisation of adjustments and commitments of the mid-term expenditure report. Non-responses were expected, and it is suggested that other respondents could not answer the questionnaires because they just refused without giving any valid reasons.

3.5 RESEARCH INSTRUMENTS

The author used the mixed approach to meet the research objectives identified in chapter one. National Department of Military Veterans was chosen because of its location

and that it's easier access to respondents. The ethical clearance from the Ethics Committee of the North-West University was issued with no reservations.

3.5.1 Questionnaires (Survey Instrument)

The questionnaire was used as the first instrument to collect data because it was an inexpensive instrument that was easy to manage and quicker to deliver to the respondents. The questionnaire was developed using Microsoft Word. Most questions were measured using the Likert scale. The questionnaire was based on the literature review done in chapter two linking the objectives of the study. The questionnaire consisted of 48 questions of which questions 28, 30, 32, 34, 43, 47 and 48 were open-ended questions, which reflected subjective comments. The remaining questions were selection type questions linked to the Likert scale point, which indicated (1) as strongly agree and (5) as strongly disagree. In circumstances where respondents could not answer the question, provision was made. In these cases, the last option in the scale was interpreted as missing and was not considered in the calculations of the means and standard deviation. The questionnaires consisted of two parts, namely (1) Biographic profile and (2) E-Government strategy implementation questions. The questionnaire was printed out and hand delivered to all potential respondents. The questionnaire allowed respondents ten days to respond. A request letter explaining the purpose of the study was attached with the ethical clearance letter (see Appendix A).

3.5.2 Semi-structured interviews (Interview Instrument)

The second instrument used was in the form of semi-structured interviews because there was direct access to respondents and it was easy for the author to meet and interview respondents. An interview protocol and questions were developed based on the research objectives and the literature review discussed in chapter three. A consent form was developed and given to all participants. The Interview protocol was explained, and all interviews were recorded. All recorded interviews were recorded and transcribed and are available upon request. An Interview protocol, consent form and the clearance letter from the ethics committee of the North- West University are attached as Appendix B).

3.6 DEMOGRAPHIC PROFILE OF RESPONDENTS

Figure 3.1 below summarises the demographical profile of all respondents.



Figure 3.1: Demographic profile of respondents

Out of 31 respondents that completed the questionnaire, 40% are from the Corporate Branch, 36.7% are from the SES Branch while the remaining 23.3% are from the ESM Branch. 40% of respondents are managers within the National Department of Military Veterans; these are Assistant and Deputy Directors of the department. These managers are responsible for the usage and the rolling out of E-Government solutions. 33.3% of respondents are administration officers; these are warm bodies responsible for using E-Government solutions on a daily basis. The analysed data has recorded that 20% of respondents were Senior Managers, these are Directors of the department. They are responsible for supporting managers in all aspects related to E-Government. And lastly, only 6.7% of respondents were from the executive cluster within the department. These individuals are playing an oversight role of implementation E-Government strategy in the department. These are Chief Directors upward. The department recorded a 53.3% of

female representation while the male representation was noted at 46.7%. The age group was categorised as follows, respondents between the ages of 31 to 40 recorded a participation portion of 43.3%, between ages 41 to 50 recorded a participation portion of 33.3%, 50 years and above recorded a 13.3% of the participation portion and lastly respondents between ages 20 to 30 recorded a participation portion of 10%. Corporate services branch responded in the majority while the large proportion of respondents were managers and females. The majority of respondents were between the ages of 31 to 40. The demographic profile sample of this study can, therefore, be concluded that it was **representative of the population**. This is because the study recorded a huge number of respondents from the sample, which consisted of participants directly involved with E-Government solutions. Both Administration officers and managers recorded a 73.3% representation.

3.7 EMPIRICAL STUDY: RESULTS

The analysis of data in this study reflected the descriptive statistics, reliability and internal consistency of the selected construct as well as correlations between the construct and selected questions; these were tested accordingly using the SPSS software packages. This will be discussed below.

3.7.1 Descriptive Statistics

The study has identified several key instructions that are linked to the study objectives identified in chapter 1 and grouped questions that are linked to each marking instruction. The following are the key marking instructions that will be discussed thoroughly in this section:

- E-Government readiness;
- IT Governance framework;
- Perceived usefulness;
- Inhibitors of implementing E-Government; and
- Challenges of implementing E-Government.

These constructs were linked to the research objectives and the literature review discussed in chapters 1 and 2.

Table 3.1 E-Government readiness – Descriptive statistics

Q#	Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean	Std Dev
Q5	ICT delivers a secure and reliable service	10.0	43.3	30.0	13.3	3.3	2.57	0.971
Q14	Majority of DMV users are more "Technologically savvy"?	3.3	20.0	33.3	33.3	10.0	3.27	1.015
Q21	ICT Services outsourced by the department are efficient and effective	10.0	20.0	30.0	26.7	13.3	3.13	1.196
Q22	ICT receives appropriate support and collaboration from the executive Management	6.7	10.0	40.0	26.7	16.7	3.37	1.098
Q23	ICT receives appropriate support and collaboration from the end-users	10.0	36.7	30.0	20.0	3.3	2.70	1.022
Q25	Majority of DMV end-users have ICT tools of trade and Internet connectivity	6.7	46.7	23.3	16.7	6.7	2.70	1.055
Q44	Do you think the majority of military veterans are computer literate?	3.3	13.3	40.0	43.3	0.0	3.23	0.817
Q45	Do you think the majority of military veterans will accept the new technology through E-Government?	10.0	40.0	33.3	10.0	7.7	2.63	1.033
Q46	Do you think the majority of DMV officials will accept the new technology through E-Government?	30.0	60.0	10.0	0.0	0.0	1.80	0.610
Q10	ICT provides the platform to reach military veterans	10.0	23.3	30.0	30.0	6.7	3.00	1.114
Q11	ICT provides the platform to reach military veterans stakeholders?	10.0	20.0	30.0	36.0	3.3	3.03	1.066
Q12	ICT participates in the formulation of departmental strategies	6.7	46.7	26.7	16.7	3.3	2.63	0.964

3.7.1.1 E-Government readiness: descriptive statistics

Descriptive statistics related to E-Government readiness are graphically depicted in Table 3.1. The author attempted to test if E-Government was ready to be implemented in the National Department of Military Veterans. This was achieved by grouping related questions that are linked to the readiness of implementing E-Government solutions. Questions identified were, Q5, Q10, Q11, Q12, Q14, Q21, Q22, Q23, Q25, Q44, Q45 and Q46.

It is evident from the descriptive statistics that the majority of respondents agree that the departmental officials will embrace E-Government solutions, as these solutions will bring ease, efficiency and productivity in their job requirements. This is attested from Q46 with a mean of 1.80 and standard deviation of 0.610 (**Do you think the majority of DMV officials will accept the new technology through E-Government?**). Respondents were mostly neutral on questions Q14, Q10, Q11, Q14, Q21, Q22, Q44. These questions were mostly testing the following for example:

- Question 14: **Majority of DMV users are more “Technologically savvy”?** Where the mean is 3.27 and the standard deviation of 1.015.
- Question Q22: **ICT receives appropriate support and collaboration from the executive Management?** Where the mean is 3.37 and the standard deviation is 1.098
- Question 44: **Do you think the majority of military veterans are computer literate?** Where the mean of 3.23 and the standard deviation of 0.817

Respondents tend to agree in question Q5, Q23, Q25 and Q12. These questions are mostly related to the readiness of the IT infrastructure, support and collaborations among internal users and external stakeholders. Although the majority of users when interviewed pointed out that there is limited collaboration among state entities when it comes to implementing E-Government solutions. The literature review done in chapter 2 on E-Government readiness, agrees with the outcomes of this analysis. This is because the literature indicated that there is a dire need for E-Government solutions across the globe because there are more benefits than issues when it comes to transparency, production and ease of use and access.

3.7.1.2 IT Governance Framework descriptive statistics

Table 3.2. IT Governance Framework – Descriptive statistics

Q#	Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean	Std Dev
Q6	ICT engages with business leaders proactively on new ideas and system improvements	13.3	36.7	36.7	13.3	0.0	2.50	0.900
Q7	ICT engages with end-users proactively on new ideas and system improvements	3.3	30.0	33.3	23.3	6.7	3.27	1.760
Q8	The ICT structure is aligned to the departmental requirements	10.0	13.3	26.7	40.0	10.0	3.27	1.143
Q9	ICT is an integral part of the department?	30.0	40.0	13.3	10.0	6.7	2.23	1.194
Q13	ICT is more focused on responding to demands of business than just providing tools of trade	10.0	30.0	43.0	10.0	6.7	2.73	1.015
Q15	ICT has a clearly articulated ICT strategy	10.0	33.3	30.0	23.3	3.3	2.77	1.040
Q16	ICT has a clearly articulated ICT partnership program	10.3	37.9	20.7	20.7	6.9	3.41	3.747

Table 3.2 represents the descriptive statistics of IT Governance framework at the National Department of Military veterans where data was collected. The IT Governance framework is a critical measure of how IT should be governed in organisations, KING IV (2016:3). The author tried to test if the National Department of Military Veterans has an adequate IT governance framework to develop, manage and sustain E-Government solutions. This was achieved by grouping all related questions (Q6, Q7, Q8, Q9, Q13, Q15 and Q16) from the survey while question 13 in the interview attempted the same objective. It is recorded that 43% of questions from the survey indicated that respondents were neutral which indicated that they were either not aware what IT Governance is or not aware if there are any initiatives that are related to IT Governance. The mean from questions (Q7 – **ICT engages with end-users proactively on new ideas and system improvements**) was 3.27, which was the same as question 8 (**The ICT structure is aligned to the departmental requirements**). Question 16 (**ICT has an articulated ICT partnership programs**) has recorded a mean of 3.41 with a standard deviation of 3.747.

57% of respondents tend to agree that that is some IT Governance awareness within the department, however, is only well presented in the management structures, it is not well presented to the user population of the department. Question 6 (**ICT engages with business leaders proactively on new ideas and system improvements**) noted a mean of 2.50 with a standard deviation of 0.900; this indicates that respondents agrees that ICT does engage business leaders, however lower level users are not kept abreast of what is happening. Respondents tend to agree that ICT is an integral part of the department. This was proven by the recorded mean of 2.23 with a standard deviation of 1.194. Moreover, respondents also agreed that ICT had articulated its strategy, however business leaders had an opportunity to be part of this while the lower level of the department had no opportunity to participate in the process. This is recorded in question 15 with a mean of 2.77 and standard deviation of 1.040.

3.7.1.3 Perceived usefulness descriptive statistics

Table 3.3: Perceived usefulness – Descriptive statistics

Q#	Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean	Std dev
Q17	ICT needs to be agile, while acknowledging challenges and issues at hand	26.7	66.7	6.6	0.0	0.0	1.80	0.551
Q18	ICT needs to be innovative while acknowledging challenges and issues at hand	40.0	60.0	0.0	0.0	0.0	1.60	0.498
Q19	ICT needs to be forward-looking while acknowledging challenges and issues at hand	33.3	66.7	0.0	0.0	0.0	1.67	0.479
Q20	ICT needs to be agile	3.3	63.3	3.3	0.0	0.0	1.70	0.535
Q24	Strategic partnerships are critical for better ICT service delivery	40.0	60.0	0.0	0.0	0.0	1.60	0.498
Q26	E-Government solutions are critical for better service delivery	26.7	63.3	6.7	3.3	0.0	1.87	0.681
Q27	In your opinion, should there be any changes to the ICT service model?	30.0	53.3	13.3	3.3	0.0	1.90	0.759
Q29	In your opinion, do you think DMV employees are aware of E-Government solutions?	23.3	60.0	16.7	0.0	0.0	3.93	0.640
Q31	In your opinion, do you think DMV management are aware of E-Government Solutions?	20.0	26.7	30.0	23.0	0.0	2.57	1.073

Table 3.3 depicts the descriptive statistics of perceived usefulness. Perceived usefulness is identified as one of the independent constructs in the Technology Acceptance Model (TAM). Davis et al. (1989:983) define perceived usefulness as a measure if people will accept and use a system to enhance their effectiveness within their respective roles in organisations. Davis (1989:334) further emphasises that the perceived usefulness influences behaviour intention, and the attitude of how people will react when using the system. Table 3.3 grouped questions (Q17, Q18, Q19, Q20, Q24, Q26, Q27, Q29 and Q31) related to perceived usefulness. 78% of respondents strongly agree that ICT needs to be agile, innovative, forward-looking, advance in partnership programs and that there should be changes within the ICT directorate to realise growth and productivity within the department. The majority of respondents when interviewed indicated that ICT needs to engage with users more often and that senior and executive management should support ICT initiatives.

This summary was found on questions 17, 18, 19, 20, 24, 26 and 27. Respondents in question 31 (**In your opinion, do you think DMV management are aware of E-Government solutions?**) tend just to agree because the mean was recorded as 2.57 with a standard deviation of 1.073. However, question 29 indicated that respondents were neutral moving towards disagreeing. The mean from the survey was 3.93 while the standard deviation was 0.640. On the other side, 80% of respondents in the interview disagreed with the notion that employees are aware of E-Government solutions. Although there is a term in the department, the majority of low-level employees did not know what E-Government is, its benefits and why it is important to be implemented. 20% were neutral on this notion.

3.7.1.4 Challenges and Inhibitors – descriptive statistics

Table 3.4: Inhibitors - Descriptive statistics

Q#	Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean	Std Dev
Q35	It is difficult to implement E-Government solutions at DMV due to resistance from employees	13.3	36.7	43.3	6.7	0.0	3.43	0.817
Q36	It is difficult to implement E-Government solutions at DMV due to lack of support from the executive	20.0	36.7	30.0	13.3	0.0	2.37	0.964
Q37	It is difficult to implement E-Government solutions at DMV due to lack of adequate skills and tools within the ICT section	23.3	33.3	20.0	20.0	3.3	2.47	1.167
Q38	It is difficult to implement EE-Government at DMV due to lack of adequate skills within SITA as the implementation agency	6.7	46.7	26.7	13.3	6.7	2.67	1.028
Q39	It is difficult to implement E-Government at DMV due to lack of adequate collaboration mechanisms within the Public Service	13.3	46.7	33.3	6.7	0.0	2.33	0.802
Q40	It is difficult to implement E-Government at DMV due to lack of adequate national E-Government strategy and framework	13.3	50.0	23.3	10.0	3.3	2.40	0.968

Table 3.5. Challenges - Descriptive statistics

Q#	Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean	Std Dev
Q33	In your Opinion, do you think DMV finds it difficult to implement E-Government solutions?	20.0	60.0	13.3	3.3	3.3	2.10	0.885

One of the objectives of this study is to identify inhibitors of implementing E-Government. The author grouped questions (35, Q36, 37, 38, 39 and Q40) as key instruments to identify inhibitors from the respondents of the survey. **Table 3.4 identifies these inhibitors.** Question 4 on the interview methodology was used to identify inhibitors from managers of the department. 86% of respondents from the survey tend to agree that there are several inhibitors within the department that are influencing the implementation of E-Government negatively. The questions identified below have an average mean of 2.5 with an average standard deviation of 0.900.

- Question 36 - **It is difficult to implement E-Government solutions at DMV due to lack of support from the executive**
- Question 37 - **It is difficult to implement E-Government solutions at DMV due to lack of adequate skills and tools within the ICT section**
- Question 38 - **It is difficult to implement E-Government at DMV due to lack of adequate skills within SITA as the implementation agency**
- Question 39 - **It is difficult to implement E-Government at DMV due to lack of adequate collaboration mechanisms within the Public Service**
- Question 40 - **It is difficult to implement E-Government at DMV due to lack of adequate national E-Government strategy and framework**

Question 35 (**It is difficult to implement E-Government solutions at DMV due to resistance from employees**) was neutral with a mean of 3.43 and a standard deviation of 0.817. Table 3.5 identifies challenges from the survey. Question 33 (**In your opinion, do you think DMV finds it difficult to implement E-Government**) was the only question identified. Respondents tend to agree with the notion that it is difficult to implement E-Government solutions within the department. This question noted a mean of 2.10 with a standard deviation of 0.885. On the other hand, question 4 from the interview strategy was: **What do you think who are inhibitors of implementing E-Government in the department?** Question 5 (**What do you think are the challenges of implementing E-Government in the department?**) on the other hand was intended to identify challenges of implementing E-Government.

Respondents combined these two and cited the following as challenges and inhibitors of implementing E-Government:

- Lack of adequate support from the executive authority, executive management and management of the department
- Lack of adequate support from SITA
- Lack of information with regards to E-Government benefits to general employees
- Long approval processes
- Lack stakeholder collaboration
- Budget constraints through cost containments from National Treasury
- Lack of adequate ICT infrastructure
- Lack of government collaborations
- Leadership instability (The department does not have an Accounting officer appointed for a full term)
- Huge dependency on third-party ICT service providers (Inherit their challenges)
- Lack of adequate skills to implement E-Government within the department

Noting the responses from the respondents, there are no success factors as yet because the department is still in the process of trying to implement E-Government solutions. However, it was noted in question 42, **(Do you know of any efficient government online tool or solution that the government has implemented across the country?)** of the survey that respondents noted successes of E-Government in the departments like South African Revenue Service (SARS), Department of Home Affairs, Eastern Cape provincial government, etc. It was further discovered during the interviews that there are several government entities with great online systems implementations through E-Government strategy. However there is no adequate framework that can assist in leveraging these successes. It was also noted that there are huge inhibitors and challenges in the Public Service through the DMV. It was clear that there was no adequate framework available to guide the implementation of E-Government in the department of military veterans. Question 11 of the interview also indicated that there is limited collaboration within the public service when it comes to the implementation of E-Government. The objective of the study was to develop a managerial framework that will guide E-Government implementers, sponsors and users on how to implement and sustain technology solutions within the Public Service.

Noting the number of inhibitors and challenges identified in this study, it is justified that a managerial framework is developed for the department of military veterans, which if successful can be used across the Public Service.

3.8 RELIABILITY AND INTERNAL CONSISTENCY

Cronbach (1951:298) indicates that the Cronbach's alpha is an equation used to measure reliability and consistency and that it determines if items and subsets of items in the measuring of the instrument are highly correlated. Cronbach's alpha α is therefore used as a coefficient of reliability of items in a survey. If it is found that the survey produces different values when it is used under the same conditions, it will have a low reliability. Field (2009:666); and Sekaran and Bougie (2009:325) note that a value of $\alpha > 0.7$ is considered to be acceptable and a value of $\alpha > 0.8$ is considered to be good and mostly used as evidence. Mathematically, Cronbach α is depicted as: Please note that in this study, constructs will be analysed not individual questions. The equation looks at the following items:

- Number of items in the construct (k)
- Variance of item i where $i = 1$ to k
- Variance of the observed total item scores

Equation 3.2 Cronbach's alpha

$$\alpha = \frac{k}{k-1} \left[1 - \frac{\sum_1^k \sigma_{Y_i}^2}{\sigma_X^2} \right]$$

Source: Botha (2012:66).

Table 3.6 illustrates the reliability and descriptive statistics of constructs. Both E-Government readiness and IT Governance displayed an acceptable reliability respectively of ($\alpha = 0.732$) and ($\alpha = 0.763$).

Table 3.6 Reliability and Descriptive statistics of constructs

Questions	Marking Instruction	Cronbach's Alpha	Minimum	Maximum	Mean	Std. Deviation
Q5, Q14, Q21, Q22, Q23, Q25, Q44, Q45, Q46	E-Government readiness	0.732	1.40	3.60	2.6900	0.51284
Q17, Q18, 19, Q20, Q24, 26, Q27, Q29, Q31	Perceived usefulness	0.590	1.44	2.67	2.0704	0.31895
Q6, Q7, Q8, Q9, Q13, Q15, Q16	IT Governance Framework	0.763	1.00	4.00	2.7286	0.73358
Q35, Q37, Q38, Q39, Q40	Inhibitors	0.520	1.40	4.20	2.6600	0.61734
Q36		N/A	1	4	2.37	0.964
Q41		N/A	1	4	2.63	0.850

Both Perceived usefulness and inhibitors displayed an alpha of ($\alpha = 0.590$) and ($\alpha = 0.520$) respectively. Field (2009: 675) through Kline (2009:821) research indicates that although the generally accepted value of 0.8 is appropriate for cognitive and intelligence tests, 0.7 is also applicable, however the researcher also notes that a value that is less than 7 is acceptable especially when one is dealing with psychological constructs. Pallant (2010:100) further denotes that scales with smaller number of items makes it difficult to get a Cronbach's alpha greater than 0.7, when that case represents itself, one can consider reporting the mean inter-item correlation. The study therefore tested and reported the results of the two constructs using the mean inter-item correlation. Field (2009:675) and Kline (2009:821) indicate that if the mean of the Inter-Item Correlations is between 0.15 and 0.50, the reliability is considered to be acceptable. Table 3.6 under perceived usefulness, a mean of 0.187 was recorded while on Inhibitors a mean of 0.159 was recorded for the inter-item correlation. Both constructs are within the range of reliability according to both Field and Kline. E-Government readiness displayed a mean of 2.6900 and the standard deviation of 0.51284, which indicates that respondents tend to be agreeing although moving towards being neutral. This is also factored in the interviews where the majority of respondents indicated that there might be training required for both internal users and military veterans on the technology solution and that the ICT infrastructure is not adequate enough at this present moment.

Perceived usefulness recorded a maximum mean of 2.0704 with a standard deviation of 0.31895. This indicates that the respondents agree with the notion that ICT needs to be agile, forward-looking, innovative and user-friendly. This also collaborates with question 1 of the interview, which attempted to check if respondents think that E-Government has been adequately explained to stakeholders. A majority of respondents felt that E-Government was not adequately presented and explained to the internal users and military veterans. IT Governance framework recorded a mean of 2.7286 and the standard deviation of 0.73358. This indicates that respondents tend to agree although moving towards being neutral. This indicates that there are some limited strives to implement IT governance. However, more work is required to be done. Respondents from the interview methodology indicated that there are structures in place within the DMV like the ICT steering committee. However, ICT's structure is not aligned with the service model of the department. It was

also noted that there are limited IT policies and lack of awareness thereof. Inhibitors displayed a mean of 2.6600 and a standard deviation of 0.61734. a Majority of respondents from both the survey and the interviews agreed that there are challenges and inhibitors of implementing E-Government in the department. These challenges are structural, operational and strategic.

Question 36 (**Is it difficult to implement E-Government solutions at DMV due to lack of support from the executive?**) indicated that respondents agree fully as the mean calculated was recorded at 2.37 and the standard deviation at 0.964. This was also identified as a challenge and inhibitor in the interview responses. This means there is a link between the responses of the survey and interview.

Question 41 is **ICT receive appropriate support from SITA?** The mean in this question was 2.63 with a standard deviation of 0.850. The bearing of these values is that, although respondents agree that SITA support ICT, this is moving towards the neutral factor. On the other hand, managers within the department as they were interviewed felt that SITA is not doing enough. They believe that a collaboration between the internal DMV ICT and SITA technical and management team might improve the situation.

3.9 CORRELATIONS

Lehman (2005:165) defines Spearman's rank correlation as a nonparametric measure that is equivalent to the Pearson correlation, and it is used as an assessment linear correlation between two variables. Welman et al. (2010: 234) denotes that a negative correlation between two constructs implies that when the other construct increases, the other one decreases.

Table 3.7: Levine's test for equality of variances (Question 4: Please state your Gender?)

Group Statistics						
Q4		N	Mean	Std. Deviation	p-value	Effect sizes
E-government readiness	1	14	2.7214	0.37247	0.752	0.09
	2	16	2.6625	0.62169		
IT Governance framework	1	14	2.6735	0.57534	0.700	0.12
	2	16	2.7768	0.86499		
Perceived usefulness	1	14	2.0794	0.32152	0.888	0.05
	2	16	2.0625	0.32702		
Inhibitors	1	14	2.5571	0.33447	0.383	0.24
	2	16	2.7500	0.78825		
Q36	1	14	2.79	0.699	0.020	0.76
	2	16	2.00	1.033		
Q41	1	14	2.64	0.633	0.954	0.02
	2	16	2.63	1.025		

Table 3.8: Correlations

Q2	Q3	E-Government readiness	IT Governance framework	Perceived usefulness	Inhibitors	Q36	Q41		
E-Government readiness	Correlation Coefficient	0.109	-0.074	1.000	.723**	0.214	.381*	-0.077	-0.198
	Sig. (2-tailed)	0.566	0.698		0.000	0.256	0.038	0.685	0.295
	N	30	30	30	30	30	30	30	30
IT Governance framework	Correlation Coefficient	0.171	-0.040	.723**	1.000	0.360	0.243	-0.149	-0.214
	Sig. (2-tailed)	0.367	0.832	0.000		0.051	0.195	0.433	0.256
	N	30	30	30	30	30	30	30	30
Perceived usefulness	Correlation Coefficient	-0.021	-0.023	0.214	0.360	1.000	0.131	0.125	-0.134
	Sig. (2-tailed)	0.911	0.902	0.256	0.051		0.491	0.511	0.480
	N	30	30	30	30	30	30	30	30
Inhibitors	Correlation Coefficient	0.045	-0.032	.381*	0.243	0.131	1.000	-0.050	-0.037
	Sig. (2-tailed)	0.814	0.867	0.038	0.195	0.491		0.792	0.846
	N	30	30	30	30	30	30	30	30
Q36	Correlation Coefficient	0.145	-0.013	-0.077	-0.149	0.125	-0.050	1.000	0.046
	Sig. (2-tailed)	0.444	0.944	0.685	0.433	0.511	0.792		0.811
	N	30	30	30	30	30	30	30	30
Q41	Correlation Coefficient	-0.114	-0.085	-0.198	-0.214	-0.134	-0.037	0.046	1.000
	Sig. (2-tailed)	0.548	0.657	0.295	0.256	0.480	0.846	0.811	
	N	30	30	30	30	30	30	30	30

Table 3.9: Levine's test for equality of variances (Descriptive Statistics)

		N	Mean	Std. Deviation	p-value	Effect sizes	
						1 with	2 with
E-Government readiness	Name	12	2.6500	0.51610			
	2	11	2.6909	0.53001	0.914	0.08	
	3	7	2.7571	0.55334		0.19	0.12
	Total	30	2.6900	0.51284			
IT Governance framework	1	12	2.6310	0.62555			
	2	11	2.7013	0.92902	0.685	0.08	
	3	7	2.9388	0.61088		0.49	0.26
	Total	30	2.7286	0.73358			
Perceived usefulness	1	12	2.0093	0.30871			
	2	11	1.9798	0.31355	0.058	0.09	
	3	7	2.3175	0.24367		1.00	1.08
	Total	30	2.0704	0.31895			
Inhibitors	1	12	2.5000	0.66332			
	2	11	2.6545	0.50668	0.332	0.23	
	3	7	2.9429	0.68034		0.65	0.42
	Total	30	2.6600	0.61734			
Q36	1	12	2.25	0.866			
	2	11	2.55	1.036	0.753	0.29	
	3	7	2.29	1.113		0.03	0.23
	Total	30	2.37	0.964			
Q41	1	12	2.92	0.996			
	2	11	2.64	0.809	0.162	0.28	
	3	7	2.14	0.378		0.78	0.61
	Total	30	2.63	0.850			

Table 3.8 depicts correlations between constructs where it was recorded that there was no significant correlation between the position and the age of respondents. Welman et al. (2010:234) further indicate that a 0.5 correlation indicates a large significance, 0.3 indicates a medium significance and 1 indicates a small significance. It is therefore recorded that there is a large significance between the IT governance readiness and the IT governance framework of 0.723. A medium significance was also noted between Inhibitors and IT readiness of 0.381. Please note that since a convenient sample was used, the p-values are only reported for completeness and will not be interpreted. If the random sample method were applied, p-values would be interpreted. Please note Table 3.7 displays p-values for question 4, which is Gender. Table 3.9 displays the p-values for all the description statistics identified.

3.10 SEMI-STRUCTURED INTERVIEWS

1. The very first question (**Do you think the benefits of E-Government have adequately been explained to stakeholders and potential users? (Measuring perceived usefulness)**) tried to test if respondents had adequate knowledge of what E-Government is. The majority of responses indicated that there was limited knowledge of what E-Government does to aid efficiency and effectiveness within the Public Service. Although they knew the concepts, benefits were not adequately explained to them.
2. The second question (**Do you think E-Government will bring ease to service delivery if implemented successfully? (Measuring Ease of use)**) It was clear from responses received from respondents that E-Government was necessary and when explained what E-Government was all about, 90% of respondents indicated that E-Government solutions were required within the Public Service.
3. Question four and five were used to identify challenges and inhibitors of implementing E-Government. Most challenges and inhibitors were identified and discussed thoroughly. Collaboration and support from senior management were identified as the key issues followed by budget constraints. Although some respondents indicated that leadership instability was one of the issues, they also believed that lack of adequate skills within DMV ICT directorate and SITA were parties to the challenges.

4. It was also noted that DMV internal users might have to be trained to use E-Government solutions, as some might not be technologically savvy. It was also noted that a majority of military veterans, especially those who come from non-statutory forces as uMkhonto we Sizwe and APLA, might not be able to use technology. However, most respondents felt that they will cope and a plan should be developed to make an awareness of this implementation.
5. The role of IT Directorate, DMV Management and SITA was discussed. Most respondents felt that IT should lead the technological implementations, DMV management should support, monitor and evaluate these initiatives and lastly SITA as the implementation agency should possess necessary skills and capabilities to implement these initiatives within agreed timeframes.
6. The implications of implementing E-Government were also discussed. The majority of respondents feels that there will be more positive implications as compared to the negatives. Most respondents believed that E-Government solutions if implemented, users will accept and use the systems.

General comments:

The question that stood out was question 6. Respondents managed to depict a picture of an environment where E-Government implications are mostly positive. Respondents indicated that operations would be more effective if E-Government were to be implemented. The other question that stood out was when respondents were asked to identify challenges and inhibitors. The majority of respondents' responses were similar, noting the long approval processes, financial containment, leadership instability and more.

3.11 CONCLUSION

The results of the empirical study were presented and analysed in this chapter. The study started analysing the demographic profiles of respondents. The findings were thoroughly discussed in this section. The study in this chapter further analysed empirical data received from questionnaires sent to the DMV staff. The questionnaires were transcribed using an SPSS capability. The study identified a few constructs, which were aligned to the study objectives identified in chapter 1. These constructs were further analysed using descriptive

statistics wherein the mean, and the standard deviation of each construct was analysed and presented. The study further tested the reliability of the results by using Cronbach's alpha against each construct. Inter-item correlations were also used to test the consistency and the reliability of constructs, which recorded an alpha of less than 5. The study further tested the correlation between constructs and several data that depicted the p-values that were presented. Findings transcribed from the semi-structured interviews were analysed and presented in this chapter. Findings indicated that although there are challenges and inhibitors within the Public Service related to E-Government, online solutions through E-Government were critical and required within the public service space. The study indicated that there would be more positive implications of implementing E-Government than the negatives. Most respondents felt that IT, DMV management and SITA needed to take charge of their different responsibilities in implementing E-Government solutions. It was also noted by the majority that there is a limited collaboration between government departments when it comes to implementing IT systems. The transcribed data indicated that training and development should be part of the things that IT needs to lead before, during and after any IT solution is implemented.

3.12 CHAPTER SUMMARY

The chapter mainly focused on the research methodology and the empirical study. The mixed approach methodology was explained with the sample size requirements for both qualitative and quantitative methods. Limitations were identified and dealt with accordingly in this chapter. Descriptive analysis, reliability and correlations were tested using the SPSS software package. Challenges and inhibitors of implementing E-Government in the Public Service using the DMV as the case study were discussed and the reliability of these tests was done against the identified constructs. Lastly, the chapter discussed and reported on semi-interview questions transcribed by the author. These results were linked to the objectives of this study and thorough analysis was accorded in this chapter.

CHAPTER 4: CONCLUSIONS AND RECOMMENDATIONS

4.1 INTRODUCTION

The primary objective of the study was to develop a managerial framework to manage the difficulties that Public Service departments experience when implementing the E-Government strategy. To achieve this study objective, the following secondary objectives were identified:

- I. To determine E-Government critical success factors at the Department of Military Veterans
- II. To determine challenges of implementing E-Government at the Department of Military Veterans
- III. To determine inhibitors of implementing E-Government at the Department of Military Veterans
- IV. Investigate how E-Government is implemented in South Africa.

The literature review in chapter 2 discussed in detail the E-Government overview. E-Government overview defined what E-Government is, identified types of E-Government implemented here locally in South Africa and on a global scale, discussed the stages of implementing E-Government; this encapsulated the research done by Gartner, the United Nations and the World Bank. The literature review in chapter 2 further discussed the benefits of having E-Government implemented in the Public Service; this encapsulated the South African and the global fraternity. The literature review further discussed the challenges of implementing E-Government in the Public Service; this covered the South African and global landscape. The literature review further discussed different types of inhibitors identified for implementing E-Government, the study looked at the South African landscape and compared it with the global landscape.

The study in chapter 2 discussed further the Technology Acceptance Model (TAM). TAM looked at the perception end-users have on innovations and enhancements. The study in chapter 2 also discussed the Innovation Diffusion Theory (IDT). The IDT investigated if TAM was a success and further looked at ways of accepting innovation and new enhancements. Lastly, the study in chapter two discussed the IT governance framework.

The empirical study was conducted in chapter three where the mixed method was adopted. Questionnaires and semi-structured interviews were used to collect data. Data analysis was conducted in chapter 3 and was in line with the literature review done in chapter 2 and study objectives identified in chapter 1. Chapter 4 will focus mainly on concluding the literature review done in chapter 2 and the empirical study done in chapter 3. Chapter 4 will further showcase recommendations to implement an E-Government strategy effectively so that service delivery can be accelerated to citizens. The chapter will further recommend a governance framework for implementing an E-Government strategy.

4.2 RECOMMENDATIONS WITH REGARDS TO THE IMPLEMENTATION OF E-GOVERNMENT IN THE PUBLIC SERVICE, USING THE DMV STUDY

The first study objective (identified in 1.4.2) was realised as results from the literature review, and the empirical study indicated that there are some state entities that have successfully implemented E-Government solutions. The empirical study in chapter three provided examples such as the SARS e-filing system, the new home affairs ID and passport booking and the online registration capability for the municipal infrastructure programs. The secondary objective of the study (identified in 1.4.2) was also realised, and the empirical study identified some challenges and inhibitors. The findings indicated that there is lack of adequate support from the executive of the department, lack of stable leadership as executive roles tend to be not filled for a long time, long approval processes within the public service, limitations of resources due to cost containment from the national treasury, lack of adequate ICT infrastructure, lack of adequate ICT skills from DMV and SITA, and so on. The literature review done in chapter 2 supported the results in such that most of these challenges and inhibitors are common in the Public Service.

The third secondary objective of the study (found in 1.4.2) was tested in the empirical study conducted in chapter 3. This was also realised as the literature review indicated that most organisations lacked a sound IT governance framework. The literature review indicated that the majority of these organisations are public entities. The empirical study found that there is limited knowledge of IT governance within the Public Service. The study also found that most public entities lacked a sound IT governance framework.

The last secondary objective of the study (found in 1.4.2) was released, because the empirical study found that there is no adequate collaboration between the public entities, as such there was no common E-Government framework adopted. Each department adopted its way of implementing E-Government. This was collaborated by the literature review in chapter two where it also found that there is no common framework that countries use to implement E-Government. Rather countries are using different methodologies and frameworks. As such the objective was met.

4.2.1 Comments

The results from the literature review indicated that it was difficult to implement E-Government in African countries due to lack of adequate ICT infrastructure, cost of data, scattered rural areas and high volumes of computer illiteracy. Although this is also relevant in South Africa, the literature review indicated that the South African population was embracing the use of smartphones as it was reported that majority of households in South Africa had access to the internet via their smartphones or tablets. It was also reported in the literature review that long, unnecessary approval processes in the Public Service in general, this was a global perspective. The empirical study conducted in this research collaborates with these findings. Although there are challenges and inhibitors of implementing E-Government in the Public Service, there are also successful implementations done across the globe. The literature review found that countries India, Russia, USA, Singapore etc. automated its government functionalities years ago through E-Government solutions.

In South Africa, there are successes as well as E-Government solutions. The government e-strategy dictates that by 2024 the majority of E-Government services will be automated through E-Government solutions. Departments like SARS have implemented successful e-filing systems and continue to upgrade and develop more online applications. The Department of Military Veterans is in the process of automating the registration of military veterans into the national database. The department will also automate the benefits management system that will enable military veterans to access benefits online. The empirical study indicated that most public service departments lacked adequate IT governance framework and charter. The Auditor General of South Africa through the

literature review in chapter 2 also collaborated this finding. KING IV has differentiated IT governance and corporate governance as such. IT Governance is a critical component of making sure that E-Government projects are successfully implemented and well maintained after implementation. Having noted all the above secondary objectives, the primary objective of developing a managerial framework to implement E-Government is still relevant and required.

4.3 PROPOSED MANAGERIAL FRAMEWORK OF IMPLEMENTING E-GOVERNMENT IN THE PUBLIC SERVICE

Mosa et al. (2016:99) has developed a cloud-based E-Government framework that is relevant to the South African landscape. The South African e-strategy dictates that government online solutions should be hosted in a secured, yet easily accessible cloud. It is only relevant that the South African government should adopt a framework that will be relevant to its policies, standards and norms. Figure 4.1 illustrates the proposed cloud-based E-Government framework. In the cloud-based E-Government framework, there are three basic building blocks, namely, the user interface, data storage and the back-end block. The user interface provides a capability for citizens to use mobile phones, tablets, laptops and personal computers to access government web pages. The data storage block will adopt the central storage paradigm; this is because, with the central storage capability, the system can initiate one or more database instances thus managing data integrity, consistency, security and easy accessibility.

There are different layers of the data storage block to also assist with the integration of third-party systems like banks and others. The transparency management layer accords the Public Service to manage the business continuity plans adequately. The synchronisation layer is responsible for making sure that data is updated between offline and online transactions. The last building block is the back-end block which covers a variety of services such as workflow management, document management, user management, notification services and business logic of government services. This includes user authentication and data storage of user accounts. This also includes user registration processes, password management and user profile editing. The proposed method will also allow synchronisation of private user like Google, Facebook and Twitter.

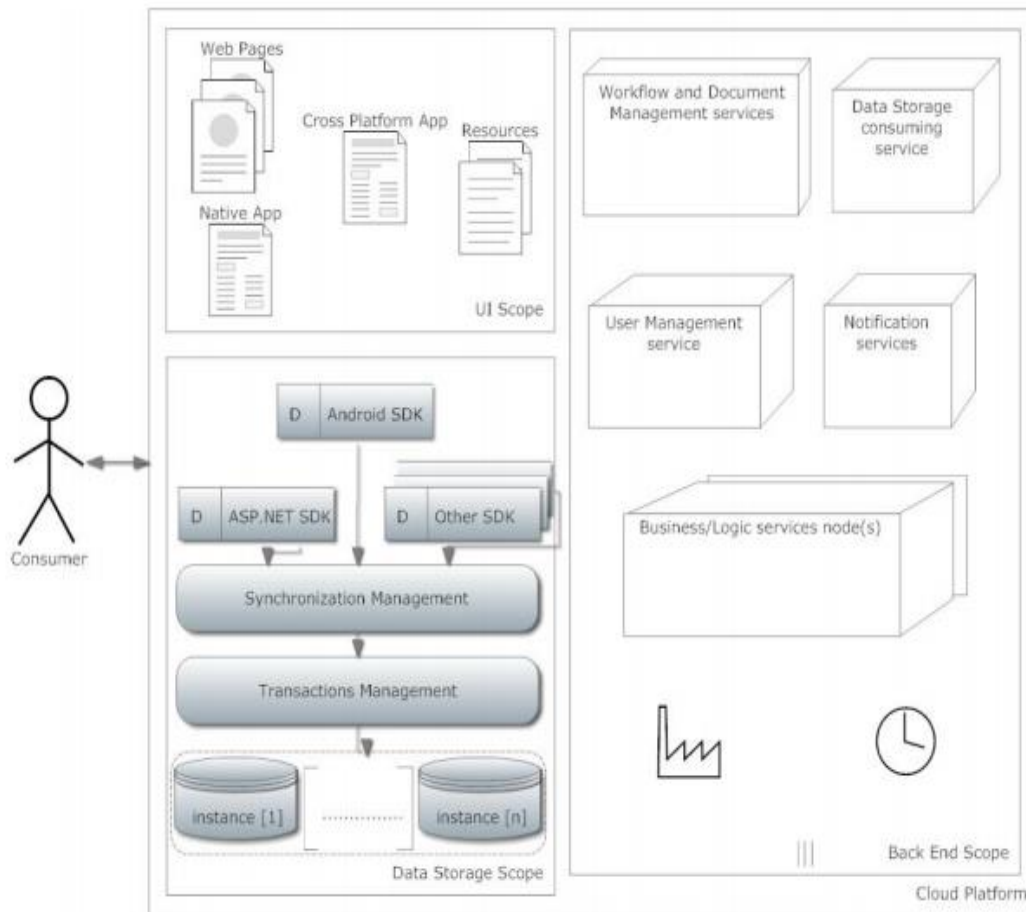


Figure 4.1: Proposed Cloud-based E-Government framework

Source: Mosa et al. (2016:100)

It is important that any proposed framework enable service delivery to be effective and efficient. This is critical because a professional framework should be able to save governments resources, aid transparency and limit bottlenecks within the Public Service. The proposed framework will achieve those requirements because it is built on the e-strategy requirements and its alignment to the global standards and needs. The literature review in chapter 2 identified several issues of implementing E-Government, one of them is the lack of ICT infrastructure. This framework will assist as everything will be in a cloud. Cybersecurity issues will also be managed through the data storage block yet achieving one of the critical requirements in any government data space.

4.4 LIMITATIONS AND IMPLICATIONS OF FURTHER STUDIES

The empirical study was only limited to one national department in the South African landscape. Although end-users, managers and executive managers of the DMV might represent a view of the public service, these findings cannot be generalised to the entire public service because non-probability sampling was used. Despite this limitation, this study has contributed to the body of knowledge of information systems. The study has further added to the empirical body of E-Government research in South Africa based on the recommendations discussed in this chapter. Further studies are required to develop a South African cloud-based E-Government strategy.

4.5 RECOMMENDATIONS FOR FURTHER STUDIES

This mini-dissertation recommends further studies on the development of a cloud-based E-Government framework for the South African government. This framework should be aligned to the South African e-strategy and UN requirements for the implementation of E-Government solutions. The study should focus on the South African government as a whole so that a common framework is adopted and used by the public service.

4.6 CONCLUSION

This research aimed to develop a managerial framework of implementing E-Government for the department of military veterans. This was to be achieved by testing the identified secondary objectives discussed in chapter one. The empirical study was conducted to align the study objectives with the literature review discussed in chapter 2. Empirical data was analysed in chapter 3 using the SPSS software package. The empirical study identified all successes of E-Government, challenges and inhibitors, IT governance framework and lastly how E-Government is implemented in the department of military veterans. The evidence confirmed that some of the challenges and inhibitors are of a global nature while some are continental and some are locally related. It was also confirmed there is a dire need to implement E-Government solutions in South Africa. It was also confirmed that service delivery could be driven effectively through E-Government solutions. Recommendations towards developing a managerial framework were discussed, as such a proposed cloud-based E-Government framework was identified and discussed. The proposed cloud-based E-Government framework is aligned to the national e-strategy of

government, local and global legal prescripts, standards and norms. It is further confirmed that all objectives including the primary objective (identified in 1.4) were met.

4.7 CHAPTER SUMMARY

The findings of the literature review, questionnaires and transcribed interviews were summarised, and conclusions and recommendations were made in proposing a cloud-based E-Government framework for the South African government. Recommendations based on each study objectives were discussed and summarised. Recommendations flowed through and assisted in proposing a conceptual framework for the government. The limitations and further studies were discussed, and proper suggestions were made towards possible studies.

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Annexure A: LETTER FROM LANGUAGE EDITOR



Dynamic Language &
Translation Specialists

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Friday, 17 November 2017

To whom it may concern,

Re: Letter of confirmation of language editing

The dissertation **Developing a managerial framework for the implementation of an e-government strategy in the department of military veterans** by **Bangani Jeffery Mpangalasane (26841614)** was language edited. The referencing and sources were checked as per NWU referencing guidelines. Final corrections remain the responsibility of the author.

Antoinette Bisschoff

Officially approved language editor of the NWU since 1998
Member of SA Translators Institute (no. 100181)

Precision ... to the last letter