AN EVALUATION OF E-GOVERNMENT IMPLEMENTATION: THE CASE OF HARARE CITY COUNCIL

by

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DECLARATION

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ABSTRACT

The use of information and communication technology (ICT) in the public sector has brought much transformation. Governments worldwide have adopted the use of ICT to improve their operations with impressive results. Electronic government (e-government) has proved that it has the ability to reduce government expenditure, to strengthen communication within organisations as well as between government and citizens, to increase effectiveness and efficiency in government operations and also to increase transparency in government operations, thereby combating corruption.

Though e-government promises a lot of benefits, these benefits will only be realised by those who are committed to its proper implementation. There are various factors that have been identified in e-government literature as essential for e-government implementation. These factors, when not taken into consideration during the implementation phase, will complicate sound e-government development. They include the availability of an e-government vision, availability of a sound ICT infrastructure, a sound financial commitment, and leadership that is committed to e-government projects, among other factors.

This study assesses the e-government implementation process in Harare City Council (HCC). The findings reveal that the implementation is not according to acceptable best practices. A number of factors that are crucial for e-government implementation success have been overlooked and need attention if HCC is to fulfil its e-government objectives.

OPSOMMING

Die gebruik van Inligting en Kommunikasie Tegnologie (IKT) in die publieke sector het groot transformasie aangebring. Regerings wêreldwyd het IKT begin toepas om hul bedryf te verbeter, met indrukwekkende resultate. E-regering het bewys dat dit die vermoë het om staatsbesteding te verminder, kommunikasie binne organisasies asook tussen die regering en burgers te verbeter, doeltreffendheid in regeringsbedrywighede te verbeter, asook om deursigtigheid in regeringsbedrywighede te bewerkstellig en sodoende korrupsie te bekamp.

E-regering behels baie voordele, maar hierdie voordele kan net ‘n werklikheid gemaak word deur diegene wat hulself aan ordentlike implementering toewy. Daar is verskeie faktore wat in e-regering literatuur aangewys word as absoluut noodsaaklik vir die implementering van e-regering. Indien hierdie faktore nie in ag geneem word deur die implementeringsfase nie, sal dit die ontwikkeling van kwaliteit e-regering kompliseer. Die faktore behels onder andere die beskikbaarheid van ‘n e-regeringsvisie, beskikbaarheid van ‘n goeie IKT infrastruktuur, goeie finansiële verbintenisse en leierskap wat toegewy is aan e-regeringsprojekte.

Hierdie studie het die implementeringsproses van e-regering in Harare Stadsraad (HSR) bestudeer. Die resultate wys dat die implementasie nie volgens aanvaarde beste praktyke plaasvind nie. Verskeie faktore wat noodsaaklik is vir die sukses van e-regeringsimplementering is misgekyk en benodig aandag as HSR hul e-regering doelwitte wil bereik.

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CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

ADB	African Development Bank
AP	Access Points
BEC	Bureau d'é Tat Civil
BIQ	Business Intelligence Quotient
CCS	Central Computing Services
CIO	Chief Information Officer
COMESA	Common Market for Eastern and Southern Africa
E-governance	Electronic Governance
E-government	Electronic Government
EGDI	Electronic Government Development Index
ERP	Enterprise Resource Planning
G2B	Government to Business
G2C	Government to Citizen
G2G	Government to Government
GIS	Geographical Information System
GoZ	Government of Zimbabwe
HCC	Harare City Council
HSR	Harare Stadsraad
ICT	Information and Communication Technology
ICTs	Information and Communication Technologies
ICT4D	Information and Communication Technology for Development
IDRC	International Development Research Council

IRBM	Integrated Results Based Management
ITU	International Telecommunications Union
LAN	Local Area Network
M-government	Mobile Government
MICTPCS	Ministry of Information Communication Technology, Postal and Courier Services
NGOs	Non Governmental Organisations
NPM	New Public Management
OECD	Organisation for Economic Co-operation and Development
OPC	Office of the President and the Cabinet
PC	Personal Computer
PFMS	Public Finance Management System
PIN	Personal Identification Number
POTRAZ	Postal and Telecommunications Regulatory Authority of Zimbabwe
PTC	Postal and Telecommunications Corporation
SAP	Systems Applications and Products
UN	United Nations
UN DPADM	United Nations Division for Public Administration and Development Management
UNDP	United Nations Development Project
UNESCO	United Nations Educational Scientific and Cultural Organisation
WAN	Wide Area Network

ZARNet	Zimbabwe Academic Research Network
ZIA	Zimbabwe Investment Authority
Zim Asset	Zimbabwe Agenda for Social and Economic Transformation

CHAPTER ONE: INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 Introduction

E-government has changed the way governments conduct business worldwide. The introduction of ICT necessitated governments to become more responsive, accountable and transparent. E-government has become so imperative in this globalised village that almost all governments have implemented it.

The proponents of e-government have promised many benefits to those who adopt and implement e-government systems. These benefits, as noted by Ahn and Bretschneider (2011:414), include increasing economies of scale in providing services to citizens, improving citizen participation, democratic values and enhanced government accountability and transparency. E-government therefore has the capability to enhance public service delivery. Public service delivery is defined by Fox and Meyer (1995:118) as the provision of public activities, benefits or satisfactions. Most governments aim for, and seek ways to, make their service delivery systems more efficient and effective. Effectiveness, as noted by Salamon (2002:23), essentially measures the extent to which an activity achieves its intended objectives, and efficiency balances results against costs. The adoption of e-government systems can enhance efficiency, transparency, and accessibility in public service delivery – an aim of almost all governments and thus a necessity.

The results of e-government implementation have not always been positive, especially in developing states. Some efforts to introduce e-government systems failed dismally for various reasons. Heeks (2001:17) attributes the failure of e-governance projects to two main reasons, namely a lack of e-readiness and design-reality gaps. E-readiness relates to how a country or organisation is prepared to adopt e-government. It is an assessment of whether there are qualified personnel and a sound institutional framework supported by a strong legal framework in order to support the introduction and proper function of ICTs.

The other main challenge of e-government implementation in the context of a developing country context is the digital divide. This concept, as noted by Lau (2007:48), refers to the gap between those who have skills and access to ICTs and

those without. There is a possibility that, if this issue is not addressed, e-government projects will only benefit the elite and not ordinary citizens.

1.2 Background

In Zimbabwe, e-government is said to have started as early as 1972 when the Central Computing Services was introduced to provide ICTs to the public service. However, its development since then has been slow and restricted, mainly to the administration side of government business known as e-administration. All interaction between government departments, citizens and other stakeholders were mainly continued using a paper-based approach. In 2005, the Zimbabwean government adopted the Integrated Results Based Management (IRBM) system, in which e-government plays an important role, and since then a renewed interest in e-government implementation has emerged (Common Market for Eastern and Southern Africa (COMESA), 2013).

Since then, almost all government ministries have established a web presence. HCC falls under the mandate of the Ministry of Local Government, Public Works and National Housing and as a government entity it was also introduced to IRBM. Therefore, it started investing in e-government.

E-government implementation in developing countries is not an easy task, and more so in a local government context. The implementation process is likely to face many challenges that may hinder the full realisation of the benefits of e-government. As contexts differ there is no rigid framework for e-government implementation, though there are some crucial factors that are so important in the implementation process that, if ignored, they could negatively impact the outcome. These factors include the availability of an e-government vision and sound ICT infrastructure, a sound financial commitment, leadership that is committed to e-government projects, and efforts to combat digital divide.

E-government is a new phenomenon in HCC, and so far no study has been undertaken to assess its progress and challenges. The implementation of e-government in the back office started a few years ago, but the creation of a functional website is new and further e-government projects may be necessary. This

study sets out to assess if HCC is considering the fundamental factors essential for e-government implementation. Identifying challenges faced in implementation at any early stage can help policy makers find strategies to promptly address these.

1.3 Research Problem

Previous studies on e-government carried out on HCC (Zinyama, 2012) show that the council didn't appreciate the benefits of e-government and indicate that the council had other priorities rather than the implementation of e-government. This has changed since then as the strategic plans for HCC for 2012-2025 reveal that ICT plays a major role in enhancing service delivery. The HCC has now started implementing e-government and is keen to embrace its accompanying benefits.

This study assesses the implementation process of e-government with particular attention to front office e-government to see if it is conducted in an efficient and proper way that will transform HCC activities for the better. The literature review, as part of this study, indicates that there are factors that, when taken into account in the implementation phase of e-government, can result in successful projects. This study assesses if HCC has taken these factors into account in its e-government implementation process.

1.3.1 Research question

Is the implementation of e-government in HCC being carried out in a proper way that will result in achieving its intended objectives?

1.3.2 Research objectives

- to gain a broader understanding of international perspectives of e-government
- to gain a broader understanding of the e-government implementation process in the Zimbabwean context
- to assess e-government implementation in HCC
- to identify challenges being encountered in the implementation process

1.4 Research Design and Methodology

Both empirical and non-empirical qualitative research designs were applied in this study. The researcher relied on both primary and secondary data collection, analysis and assessment. A comprehensive literature review was carried out to understand issues around e-government and new data was collected. A case study approach was also followed because this approach can help broaden an understanding of the uniqueness of a case by focusing singularly on it, as noted by Welman, Kruger and Mitchell (2012:193).

1.5 Data Collection Methods

Information was initially collected through a critical literature study. This was conducted through an assessment of the existing scholarly, professional and technical documentation on e-government. Key documents of HCC, such as their strategic plans, budgets, departmental annual reports and legislation relevant to this study were also thoroughly assessed. Newspapers (both online and hard copies) were also used to gather data. Unstructured interviews and participant observation are the main methods used in case studies (Welman, Kruger & Mitchell, 2012:194). The unstructured interview was the main data collection method used to collect primary data in the case, as penetration into the organisation for participant observation was impossible because the research was based in a different location.

Unstructured interviews were carried out with key informants in the council. These mainly included people working in the department of ICT as this is the department directly concerned with the technical implementation of e-government. However, in some cases the interviews became structured because interviewees would insist on a set of interview questions beforehand. Managers from different departments in the council were also interviewed to understand the process of e-government implementation. Basic interviews were carried out with staff from selected district offices, clinics and libraries. Structured interviews were also carried out with key informants in civil society organisations and also in academia, as they can offer an objective assessment of whether e-government is being properly implemented. A total of seventeen people were interviewed – fifteen are employees of HCC and the

other two are external people with intensive knowledge of e-government. The choice of respondents was made based on purposeful and random sampling. Employees from the ICT department and the two external people were chosen because of their experience and involvement in e-government. The other interviewees were selected on a random basis so as to gain the views of how e-government is perceived by those not directly involved in its implementation.

The researcher ensured that interviews were carried out in a professional way, and bookings for appointments were made in person. At the onset of every interview, the researcher would introduce herself and explain the purpose of her study. Efforts to create rapport with the interviewees before the interviews commenced were also made. Permission was requested of all interviewees after the process had been explained to them. All respondents were assured of their privacy and anonymity so that they would be free to discuss issues without fear of being later exposed.

1.6 Data Analysis

Since most of the data collected was qualitative, no special software was required for its analysis. Content analysis was used to analyse some data in order to highlight important issues. Special emphasis was given to recurring themes in the interviews.

1.7 Chapter Outline

The structure of this thesis is as follows:

1.7.1 Chapter one

This chapter focuses on the introduction and background of the research project. It outlines the research problem by stating the aims and objectives of the study. This chapter also describes the research design and data collection methods used.

1.7.2 Chapter two

This chapter focuses on the literature review and unpacking of the theoretical framework of e-government. Issues of new public management (NPM) and good governance are analysed, along with their effect on the emergence and

implementation of e-government. Definitions of important concepts to the study are also reviewed. This chapter presents an analysis of factors that are crucial in e-government implementation and the challenges that are likely to be faced in this process, especially in a developing nation. E-government implementation from a local government perspective is also given priority, as the case study is in a local government context.

1.7.3 Chapter three

Chapter three focuses on the status of e-government in Zimbabwe. The introduction of IRBM has had a positive effect on e-government development. A thorough analysis of the legislative framework that guides the use of ICTs in Zimbabwe is carried out and national e-government projects are briefly analysed. This sheds light on the environment in which HCC is implementing e-government.

1.7.4 Chapter four

This chapter introduces the case study. Analysis of the contextual setting is carried out for a deeper understanding of the case. E-government implementation of HCC is also examined in this chapter.

1.7.5 Chapter five

This is a crucial chapter of the thesis as it dwells on the analysis of the data collected and integrates it with the research problem. Research findings and an analysis of how HCC is implementing e-government are discussed in this chapter.

1.7.6 Chapter six

This is the final chapter of the study, containing conclusions drawn from the study and proffering recommendations.

1.8 Conclusion

This chapter introduced the focus of our study; analysing the implementation of e-government. The conviction of this study is that e-government has the potential to transform the administration of government departments for the better. However, the implementation process will define the ultimate outcome. This chapter also focused

on introducing the research problem, question and objectives. The research design and methodology were also analysed and the data collection methods used were stated. In the next chapter the focus will be on analysing the theoretical underpinnings of e-government.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter focuses on analysing key literature on e-government relevant to this study. It is divided into four sections. The first section focuses on definitions of key terms and elaborates the concept of e-government and electronic governance (e-governance).

Section two is dedicated to the selection of a theoretical framework that underpins e-government. The concepts of good governance and NPM and how they have impacted on promoting e-government adoption and implementation are also analysed and assessed.

The third section looks at e-government implementation, mainly in developing countries, along with the potential it has to transform developing nations' governments and the challenges that developing nations are likely to face in e-government implementation. Attention will be given to assessing the conditions that must prevail if e-government is to be implemented effectively.

Lastly is an analysis of e-government implementation at municipal level, both from developing and developed states, as this will assist in evaluating the efforts of HCC in e-government.

Key Terms: E-government, e-governance, evaluation.

2.2 Definition of E-government

Various definitions of e-government have been offered by different authors. This is due to the fact that *"e-government as a concept means a lot of different things to a lot of different groups*" (El Din Eid & Mohamed Add ElRazek, 2009:531).

The United Nations Educational Scientific and Cultural Organisation (UNESCO) (2005:8) define e-government as "*the use of information and communication technologies to promote more efficient and effective government, and make it more*

accessible and accountable to citizens". This definition refers to all ICTs that can be utilised by governments to improve their functions.

The Organisation for Economic Co-operation and Development (OECD) (2003:22) states that e-government refers to "*the use of information and communication technologies and particularly the internet, as a tool to achieve better government".* The United Nations Division for Public Administration and Development Management (UN DPADM) (2003:3) states that e-government "*comprises the operations of government in the form of inputs or outputs that take place primarily through the use of electronic technologies".*

Gant (2008:27) also defines e-government as involving *"taking computer based technologies and combining them with human based administrative processes to create new ways of serving the citizens".* E-government is also conceptualised by Braga (2003) in Stanforth (2007:37) as "*a way of organising public management in order to increase efficiency, transparency, accessibility and responsiveness to citizens through the intensive and strategic use of information and communication technologies in the inner management of the public sector as well as in its daily relations with citizens and users of public services".*

From the above definitions one can note some differences in the focus of e-government, although all definitions assent to the use of ICTs in government as e-government. All these definitions can be categorised into three specific groups which are:

- e-government can be equated to "*internet service delivery*" (OECD, 2003:23)
- e-government can be understood as "*a capacity to transform public administration through the use of ICTs"* (OECD, 2003:23)
- e-government can be "*equated to the use of ICTs in government*" (OECD, 2003:23)

These three specific groups identified by OECD (2003:23) have e-government definitions that generally cover all the perceived definitions of e-government. Almost all identified definitions of e-government in literature will fit into any of these three groups.

2.2.1 E-governance

The term e-government and e-governance are frequently used interchangeably but there is an important difference between the two. E-governance is derived from the concept of governance which is defined by Kooiman (1993:2) as "*the consequences of the style of interaction between a government and its society".*

E-governance is defined by UNESCO (2005:8-9) as "*the application of ICTs to the system of governance to ensure a wider participation and deeper involvement of citizens, institutions, non-governmental organisations as well as private firms in the decision making process".*

E-governance is more than the mere delivery and provision of information and services through ICT applications. It is "*beyond the scope of e-government", as it "allows citizens direct participation … and includes e-democracy, e-voting, and participating in political activities online"* (Fang, 2002:5).

E-governance, as noted by Kundishora (2010:9), includes the use of ICTs in the following areas:

- *"participation in decision making process by citizens"*
- *"making government more accountable, transparent and effective"*
- *"facilitating the electoral process"*
- *"maintenance of law and order"*

E-governance is therefore concerned with citizen participation and opening up channels for citizens to engage effectively with governments and vice versa. It refers to the style and results of electronic interaction between government and its society.

2.2.2 Evaluation

The term 'evaluate' is defined in the Oxford Pocket Dictionary as "*to assess"* or to "*appraise*". It is said to be derived from a French word relating to value. Evaluation will assess something in comparison to an already known or set standard or norm.

The OECD (2002:21) defines evaluation as "*the systematic and objective assessment of an on-going or completed project, program or policy, including its*

design, implementation and results". An evaluation that is carried out at the start of a project is known as a formative evaluation as it seeks to draw lessons that can be channelled back into that project to increase its effectiveness and efficiency. This is different from a summative evaluation, which takes place at the end of a project and seeks to assess the results and outcomes of a project in order to improve future projects.

The term evaluation in this study will be used to refer to the assessment of the implementation of e-government in HCC.

2.3 Dimensions of E-government

E-government has the potential to improve the interaction between a government and its clients and also to improve activities and interactions within government itself. The focus on delivering services to the citizens is referred to as the front office. OECD (2003:72) defines the front office as "*government as its constituents see it*". The use of ICTs in the management and administrative side of government functions is referred to as the back office. Investment in both front office and back office e-government is essential if an organisation or country wants to realise the full benefits of e-government. A brief discussion of what constitutes front office and back office dimensions of e-government will follow.

2.3.1 Front office e-government

When many people refer to e-government they are actually referring to front office e-government, as this is the form that is more visible to citizens. The front office dimension constitutes e-services, e-development, e-participation and e-democracy (Cloete, 2003:49). E-services relate to services that governments are able to offer their citizens online.

There has been a shift recently whereby governments have introduced modes of operations whereby a number of services can be offered electronically online. Examples of e-services that can be offered online include the ability to apply for permits, to pay traffic fines or to download e-forms. A number of developing

countries have introduced e-services successfully, like the government of Mauritius, as noted by Ruhode, Owei and Maumbe (2008:4). They have a portal that includes e-forms from different government ministries and departments that citizens can download. Recent developments in e-government have also seen the emergence of central and local governments offering integrated services from different government agencies.

E-participation and e-democracy refer to electronic channels that citizens use to have a say in the way that they are governed. There must also be transparency and governments must open up channels of communication for citizens to use to contribute to policy-making processes. Digital democracy is defined by Rooyen and Jaarsveldt (2003:240) as "*a government strategy that attempts to make the functioning of local government more transparent and improve both accountability and legitimacy."* E-participation and e-democracy will occur when the level of e-government in a country has matured and progressed to a higher level.

2.3.2 Back office e-government

Back office, as earlier indicated, refers to the use of ICTs to improve the management and administrative side of government business. Cloete (2003:3) identifies four categories of the back office type of e-government: e-technology, e-management, e-administration, and e-learning.

Electronic back office systems use management information systems, transaction processing systems, or decision support systems to enhance the functioning of government (Cloete, 2003:29). Many public organisations have placed emphasis on front end services, thereby neglecting back office reforms (Grunde, 2009:37). When a government adopts e-government it is crucial that emphasis and investment be placed both on front office and back office systems. This is supported by the OECD (2003) that "*reforming the back office is just as fundamental to achieving effective government as updating front office service delivery channels.*" Usually the front office electronic systems will not be sustainable if not backed by a powerful back office system. It is also important to note that the implementation of back office

systems usually creates changes in the workplace that must be well managed (International Telecommunications Union (ITU), 2009:26).

2.4 Benefits of E-government

E-government has tremendously affected *"every conceivable facet of government and is fast becoming the very fabric of governing*" (Curtin, 2004:4). However, it is only those who diligently and successfully implement e-government projects who will eventually reap the benefits. The OECD (2003:10) states that the final impact of e-government is "*simply better government*". This is the final outcome but there are other immediate outcomes that may be realised through e-government.

2.4.1 Enhancing service delivery

E-government can lead to "*improved and enhanced delivery of government services*" (UNESCO, 2005:10). Public service delivery is defined by Fox and Meyer (1995:118) as the provision of public activities, benefits or satisfactions.

Most governments aim for, and seek ways to, make their service delivery systems more efficient and effective. The services will be offered faster and more conveniently to the citizens. This is because e-government enables the provision of "*more accessible and up to date services*" (Culbertson, 2004:60). The services will be offered twenty-four hours a day, seven days a week and therefore citizens will have unrestricted access to services. Access and convenience have been cited as the major driving force of e-government activity (OECD, 2003:37).

E-government has the potential of *"reducing delays [and] eliminating the need for frequent visits to government office. Seven million farmers in Karnataka, India, can now obtain printed copies of land titles online in ten minutes at 177 government-run department kiosks"* (World Bank, 2004:1). Citizens will therefore save on travelling and time costs because of improved accessibility.

2.4.2 Empowering citizens

E-government has the potential to empower citizens. E-government enables accessibility of information to all concerned stakeholders (Shareef et al, 2010:61). The *"flow of information is essential for effective governance*" and will result in empowered citizens (Gant, 2008:15). Many government activities, especially in developing nations, are traditionally shrouded in secrecy and little information is made known to citizens. However e-government has the potential to alter this as it encourages the publishing of strategic documents and information on websites.

2.4.3 Increasing transparency

E-government increases transparency in government activities and expenditure (Ahn & Bretschneider, 2011:414). Increased knowledge of government processes will assist in making activities more transparent to citizens. Increased transparency in government activities will also assist in curbing corruption as citizens can track the progress of their applications online (UNESCO, 2005:10).

2.4.4 Increasing efficiency

E-government has also promised major efficiency gains in the delivery of government services (Linihan, 2005:251). E-government can improve efficiency in government departments because governments will be able to do more, cheaper and faster (Heeks, 2001:3). E-government reduces government expenditure as it can help to streamline government operations (UNESCO, 2005:10). E-government simplifies government processes and this may enable the redeployment of staff to other demanding and strategic functions or even to retrench them, thereby saving costs (World Bank, 2004:1). E-government frees up government resources for more cost-effective spending. (Misuraca, 2007:57).

2.4.5 Increasing effectiveness

E-government is also able to contribute to the effectiveness of government projects. Effectiveness, as noted by Salamon (2002:23), essentially measures the extent to

which an activity achieves its intended objectives. Through e-government, governments will be able to meet their citizens' expectations, thus improving the relationship between the government and the citizens.

2.4.6 Contributing to development

E-government can also contribute to development. This is because e-government may induce citizens to become literate and digitally literate to be able to function properly in an information society (Cloete, 2012). The United Nations (UN) (2012:4) also asserts that e-government can be utilised for the realisation of economic, social and environmental goals in development planning. As seen from the preceding discussion, e-government can increase efficiency in government operations, thereby allowing government to save costs. The saved costs, if utilised maturely, can contribute to economic development. E-government also contributes to political development by supporting good governance goals. ICTs should not be regarded as a luxury by developing countries but as a platform for improvement.

Though e-government promises so many benefits, there are some challenges and drawbacks to its implementation and these will be discussed in section 2.10.

2.5 Types of E-government Interactions

There are basically four types of interaction that occur in e-government, although some authors expand it to eight. These are detailed in the following sections.

2.5.1 Government-to-citizen (G2C) interaction

This approach enables the delivery and provision of government services and information online. This approach is said to "*fulfil the primary objective of e-government*" (UNESCO, 2005:11).

2.5.2 Government-to-business (G2B) interaction

This approach relates to the use of ICTs in procurement processes between the government and private sector (Gant, 2008:17).

2.5.3 Government-to-government (G2G) interaction

This approach relates to communication and information sharing between and among government departments and agencies. This sharing of information can be at the local, provincial or national level (Fang, 2002:7).

2.5.4 Government-to-employee interaction

This type of interaction concerns the use of ICTs in facilitating communication and management within the public service. This interaction covers "*employment opportunities, work guidelines, rules and regulations, benefits and pay structures for government employees"* (UNESCO, 2005:12).

2.6 Developmental Stages of E-government

There are various developmental stages of e-government that have been proposed by authors. These stages differ and vary from a three-staged to a five-staged process. Some proposed models are depicted in Table 2.1 below.

Table 2.1 Developmental Stages of E-government

Author	Stages	First	Second	Third	Fourth	Fifth
Gartner, 2000	4	Web presence	Interaction	Transaction	Transformation	
UN, 2001-2008	4	Emerging presence	Enhanced	Interactive	Connected	
World Bank, 2002	3	publish	Interact	Transact		
Accenture, 2003	5	Online presence	Basic capability	Service availability	Mature delivery	Service Transformation
Reddick, 2004	2	Cataloguing	Transaction			
Siau & Long, 2005	5	Web presence	Interaction	Transaction	Transformation	E-democracy
Anderson & Henrikson, 2006	4	Cultivation	Extension	Maturity	Revolution	
Mausavi, 2008	5	Cataloguing	Interaction	Communication	Transaction	Integration
Lee, 2010	5	Presenting	Assimilating	Reforming	Morphing	E-governance

Source: Shareef, Jahankhani and Dastbaz (2012:147)

The stages above might differ in terminology but they depict the basic paths that e-government development usually takes, from basic websites that offer static information to more advanced stages of e-government that integrate and transform the nature of the operations of government agencies. Only the United Nations 2008 e-government development model will be analysed in detail below.

2.6.1 United Nations 2008 E-government Development Model

The UN (2008) proposes a five-staged e-government development model that begins with the emerging stage and progresses to the enhanced stage. This is followed by the interactive stage, the transactional stage and, finally, the connected stage.

2.6.1.1 Emerging stage

This is the first level of e-government development. In this stage there is momentum to develop governmental websites. The purpose of these websites is basically

information provision. Government departments post basic information, such as details of the services they offer and contact details.

2.6.1.2 Enhanced stage

The second stage moves from provision of static information and gives individuals the opportunity to communicate with government officials. Individuals also get the chance to search for information and services.

2.6.1.3 Interactive stage

A web portal is developed and the number of online services increases.

2.6.1.4 Transactional stage

Individuals are able to make payments online. One can begin a process electronically and complete it to the stage of transacting.

2.6.1.5 Connected

This level creates a seamless government as there is integration among government departments and agencies.

2.7 Mobile Government (M-Government)

M-government is another increasingly important instrument of e-government. M-government focuses on the use of mobile applications for improving the administration of public organisations and delivery of public services. It is defined as "*the extension of e-government to mobile platforms, such as laptops, PDAs and other mobile devices*" (ITU, 2009:24).

The use of mobile platforms, especially mobile telephones, can prove to be beneficial as there has been a recent increase in the use of mobile telephony

worldwide, and particularly in Africa, in the past few years (UN, 2012:15). M-government services can be utilised to enhance the relationship and communication between citizens and government. Governments can utilise mobile technologies to provide crucial information to citizens, interact with them and allow them to carry out transactions and engage them in political and civil issues (OECD, 2011:29).

2.7.1 Benefits of m-government.

M-government is evolving as an important part of e-government. There are many benefits that have been identified so far associated with m-government, such as that it requires less in terms of communications infrastructure and the fact that mobile cellular phones are relatively cheaper to purchase and have affordable usage rates (ITU, 2009:24). M-government also offers wider coverage to government services due to the recent wider penetration of mobile technologies (Rannu, Saksing & Mahlakov, 2010:10). These technologies are convenient as they are mostly portable, providing access anytime, anywhere (OECD, 2011:36).

Some of the major benefits of m-government for citizens are presented in Table 2.2 below.

Table 2.2 Benefits of M-government

BENEFITS	DESCRIPTION
Value for money	The content and services are worthier for the price paid.
Quality of services	**Awareness:** Citizens (users) are aware of existing services, know how these work, understand their relevance and how to access these. **Accessibility:** All citizens have access to the services. **Availability:** The services work anytime, anywhere. **Reliability:** The services perform dependably, accurately and consistently. **Accuracy:** The services are more accurate and minimal to possible error. **Responsiveness:** The systems respond to any access and request promptly. **Courtesy and helpfulness:** The services are more respectful, considerate, friendly, polite and efficient.
Efficient transactions	**Usability:** Services are easier and more convenient to use. **Timeliness:** Services are delivered at the promised time and play a role in the G2C relationship. **Trustworthiness:** Services are more trustworthy. **Privacy:** User's privacy is protected. **Security:** Services are more secure.
Strategic data	**Accountability:** Through the services, citizens can communicate with government and government can answer queries privately and securely. **Transparency:** Government makes any decisions and actions visible to citizens through the services.

Source: Adapted from El Kik and Lawrence (2006), in Rannu, Saksing and Mahlakoiv (2010:15).

This table highlights the benefits that m-government offers as it enhances the quality of services offered and increases efficiency in transactions. M-government also increases value for money, making it a very important part of e-government.

2.8 Theoretical Foundations of E-government

E-government as a concept in public administration has gained momentum in the twenty-first century (Cloete, 2012:1). Its emergence and dominance has been accelerated by different reforms that took place in the public sector. The major reforms that had a profound impact are good governance and NPM concepts.

2.8.1 Good governance and the use of information and communication technology

There is a positive correlation between good governance and e-government. The use of ICTs in government has proved beneficial to the promotion of good governance goals. Good governance is conceptualised by Cloete (2003) as "*the achievement by a democratic government of the most appropriate developmental policy objectives to develop its society in a sustainable way by mobilising, applying and co-ordinating all available resources in the public, private and voluntary sectors in the most effective, efficient and democratic manner".*

Over the years it has been realised that ICTs can be utilised effectively to promote good governance goals. E-government's contribution to the reform agenda has been noted because of its impact on good governance goals (OECD, 2003:41). Good governance has many characteristics (Misuraca, 2007). It signifies "*a participative manner of governing that functions in a responsible, accountable and transparent manner based on principles of efficiency, legitimacy, and consensus for the purpose of promoting the rights of the citizens*" (Munshi, 2009:24). The United Nations Development Programme (UNDP, 1997:4) also reports that the main characteristics of good governance make it "*among other things, participatory, transparent and accountable. It is also effective and equitable. And it promotes the rule of law. Good*

governance ensures that political, social and economic priorities are based on broad consensus in society and that the voices of the poorest and the most vulnerable are heard in decision-making over the allocation of development resources." The use of ICTs in government is proven to help in the realisation of these characteristics of good governance.

E-government can help foster citizen participation. Participation, as noted by Misuraca (2007:14), "*is a cornerstone of good governance*". This is because good governance promotes the engagement of citizens in governance processes. ICTs are very capable of assisting in citizen participation and have been successfully utilised in different countries. In New Zealand the government has a website that contains draft regulations that citizens can read and then comment on (United Nations, 2012:46). This gives citizens a platform to participate and have a say in policy making.

E-government implementation can help foster transparency in government operations. Transparency means that "*decisions taken and their enforcement are done in a manner that follows rules and regulations*" (Misuraca, 2007:15). There must also be an honest commitment to make sure that those rules and regulations are known by the citizens. Transparency helps in holding government officials accountable and this in turn prevents corruption (Haque, Pathramarakal & Phinaitrup, 2012:13).

Responsiveness is the other good governance principle that can be enhanced by the application of ICTs. Good governance requires that *"institutions and processes try to serve all stakeholders within a reasonable timeframe"* (Misuraca, 2007:15). Many traditional government departments that operate manually have been known for their lack of responsiveness, with simple processes, like applying for an identity document or passport, usually taking long to be completed.

2.8.2 New public management and the use of information and communication technologies

NPM is viewed "*as an international phenomenon having significant influence on public sector reforms*" (Nolan, 2001:185). The term NPM, as noted by Duivenboden

(2005:426), was coined by Hood in 1991 and is concerned with perceiving citizens as customers. It emphasises output performance and impact consequences rather than input resources (Bissessa, 2009:1), which means that goals and targets must be set in order to measure the outputs. Cloete (2003:15) points out that this promotion of quantitative measurements of policy outputs necessitated the use of "*electronic methodologies to compile, analyse and assess the data needed for this purpose".*

The introduction of the doctrine of NPM was responsible for advancing the use of ICTs in governments. Schedler and Scharf (2001:777) believe that NPM was able to help prepare the way for e-government implementation. Whichever way one might view it, many governments realise that e-government implementation allows them to make the changes associated with NPM with much more ease. Electronic applications assist them in measuring their outputs more accurately, and the use of the internet and other advanced electronic means help them to be more responsive to their citizens. E-government promises the possibility of enhancing service delivery by making the process more convenient and less costly.

2.9 E-government Implementation

E-government implementation is a process that requires diligence and commitment from the implementers. There are many factors that must be considered both before and during the implementation process if success is to be attained. A nation or institution wishing to embrace e-government must first assess its readiness, using an e-readiness assessment to measure where the institution stands. An implicit vision, targets and objectives must be set. There must be leadership and commitment to e-government projects. E-government must also be integrated into an existing public reform or service delivery agenda. In e-government implementation, the existence of a sound budget, infrastructural and human resources and sound legal frameworks are all necessities. Failure to have these conditions in place will derail the development of e-government. This section will focus on the prerequisites of e-government implementation and then proceed to the challenges that are likely to be faced in implementation, especially in the context of a developing country.

2.9.1 E-readiness assessment

Prior to adoption and implementation of e-government, an e-readiness assessment must be carried out. This is usually done on a national level to assess "*the degree to which each country is prepared for the introduction of e-government*" (Misuraca, 2007:62). The Economist Intelligent Unit's white paper on the 2006 e-readiness rankings defines e-readiness as "*the state of play*" of a country 's ICT infrastructure and the ability of its consumers, business and government to use ICT for their benefit.

An e-readiness assessment should not be carried out as a once-off but continuously to determine a nation's e-government readiness. An e-readiness assessment framework should cover the following aspects: political and regulatory environment, infrastructure, application and services, human resources, financial infrastructure and ICT usage scenario (UNESCO, 2005:22). An E-readiness Assessment Framework must be able to assess whether existing policies are conducive to e-government, if the infrastructure (such as optic fibres and computing infrastructure) is available, whether there is enough skilled manpower and training institutions in the ICT field, as well as available financial resources to spearhead e-government projects (UNESCO, 2005:22-23).

The UN has developed an Electronic Government Development Index (EGDI). Since the inception of this conceptual framework in 2003 the UN has been consistent in using this index to measure e-government development among member states (UN, 2014:2). This index comprises three sub-indices which are as follows.

2.9.1.1 Web measure index

This index measures the development of the web presence and the progress made in the provision of e-services. There are five stages of e-government development, which start from the emerging stage and proceed to the final, connected stage (UN, 2008:16). The recent UN e-government survey reveals that all member states now have an online presence, though the majority are concentrated in the emerging and enhanced stages (UN, 2014:5).

2.9.1.2 Telecommunication infrastructure index

This assesses the state of the telecommunications infrastructure. The UN Telecommunications Infrastructure Index identifies five indices that can be used to assess the country's infrastructure. These indices are:

- the number of internet users per 100 persons
- the number of personal computers per 100 persons
- the number of main telephone lines per 100 persons
- the number of cellular telephones per 100 persons
- the number of broadbanding per 100 persons

(UN, 2008:16)

These indices are used to assess the state of the telecommunications infrastructure of member states.

2.9.1.3 Human capital index

The human capital index is "*a composite of the adult literacy rate and the combined primary, secondary and tertiary gross enrolment ratio*" (UN, 2008:17).

2.9.2 Existence of an e-government vision

E-government implementation must be preceded by the crafting of an explicit vision (Shareef, et al., 2010:60). For any project or programme to be successful there must be a clear vision and mission. Goals and strategies on how to achieve them must be laid out. This also applies to e-government projects; there must be a clear national framework which spells out the national e-government vision and strategies. However, in many developing nations there is a "*dearth of any vision or strategy on e-governance" (*Heeks, 2001:18).

The national e-government framework must be a product of consensus between different stakeholders. Government employees, citizens, businesses, academics and non-governmental organisations must all be consulted in the process of building a

national vision for e-government (OECD, 2003:69). Set strategies enable governments to measure their progress in e-government projects. This holds true for all e-government projects, even the small scale ones that only focus on a single government agency. There must be a broad vision, targets and objectives set before implementation.

Shareef, et al. (2010:60) point out that it is rare to have a success story in e-government implementation if there is no explicit vision and strategy set beforehand. Creating a well-defined vision must go hand in hand with promoting awareness in those who will both benefit and be directly affected by e-government (UNESCO, 2005:26).

2.9.3 Committed leadership

E-government projects also need committed and dedicated leadership. Cloete (2012:6) points out that, if e-government projects are to be successful, it is necessary for decision makers in government to appreciate "*that e-government is a necessity for progress and not simply a luxury".* If this realisation is made by senior officials in government then they can champion successful e-government projects. "*Leadership is an essential ingredient of e-government in order to motivate and break down barriers to change*" (OECD, 2003:93).

Many e-government projects are expensive and risky – hence the need for sustained leadership. In many countries there is a trend of allowing e-government to be coordinated by an inter-ministerial committee or an institution created for the sole purpose of defining the e-government vision, developing relevant policies and spearheading e-government projects. Examples of such institutions are the China's State Council Information Leading Group and Kenya's Directorate of E-government (World Bank, 2009:86).

2.9.4 Availability of infrastructure

The availability of ICT infrastructure is an important aspect of e-government implementation. "*Infrastructure is probably the most obvious and tangible dimension*

of e-government" (ITU, 2009:5). This infrastructure will enable the provision of information and services to citizens and the smooth exchange of information amongst government agencies.

This infrastructure may include high end computing infrastructure, fibre optic/satellite/wireless or wired networks and internet gateways (UNESCO, 2005:22). Modern technology in e-government development is more focused on the development of fibre optic networks than traditional cable networks as these tend to allow greater broadband access (World Economic Forum, 2011:26).

The dimension of infrastructure in e-government is not only limited to ICT infrastructure but also extends to the energy sector. The availability of electricity is crucial for the functioning of ICT infrastructure and hence attention must also be paid to the development of infrastructure in the energy sector (ITU, 2009:6).

2.9.5 Organisational changes

E-government implementation must also go hand in hand with some organisational changes. The introduction of ICTs "*into the public workplace also requires accompanying process changes in order to make the most of e-government*" (OECD, 2003:88). Rosabeth Moss Kanter in Culbertson (2004:59) refers to a situation where accompanying reforms are not made in conjunction with e-government implementation as "*putting lipstick on a bulldog*".

Most of the back office reforms that are crucial in e-government implementation will certainly effect some organisational changes. Some new workflow patterns and new responsibilities will emanate from the introduction of new back office systems. These changes must be well managed or they will negatively affect operations as internal resistance might arise (ITU, 2009:26).

2.9.6 Public private partnerships

Successful e-government implementation also requires partnership with the private sector. This engagement is said to allow government agencies to tap into the specialised skills of the private sector, such as software development. It also

minimises the need to raise enough funds upfront before utilising a service (OECD, 2003:126-127). *"A healthy collaboration and partnership between e-government and the industry/private sector entities shall lead to an easy fulfilment of e-government goals"* (UNESCO, 2005:15). Kundishora (2010:6) also indicates that one of the challenges of ICTs in developing countries, and Africa in particular, is inadequate public private partnerships. Governments should therefore seek ways to engage with the private sector if they are to fulfil their objectives for e-government.

2.9.7 Inclusion of all relevant stakeholders

Getting buy-in from all the relevant stakeholders is a prerequisite for successful e-government implementation. It must be ensured that key stakeholders are engaged in the e-government project from the start. Shareef, et al., (2010) note that stakeholders, like policy makers, practitioners and academics, must be involved in the conceptualisation of the e-government vision of a country. Everyone, including the citizens, business organisations and employees who will be directly affected by e-government implementation, should be engaged from the conceptualisation phase.

2.9.8 Sustained budget

Effective e-government implementation will certainly require a sound budget specifically allocated for that purpose. ICTs are regarded as expensive and risky (World Bank, 2009:83). In many countries, and especially in developing nations, e-government will compete with other policy objectives and it is very rare that e-government will win this competition (Gant, 2008:11; OECD 2003:54).

If e-government is not prioritised in resource allocation, it will suffer and not meet the intended objectives. Many e-government projects in developing countries therefore suffer because of resource constraints. Priority is placed on other pressing policy issues, like the provision of education and healthcare facilities. Investments in e-government projects tend to be a luxury in such circumstances. However, it is important to realise that e-government is now gaining priority.

2.9.9 Monitoring and evaluation

A framework for assessment must be developed before implementation (World Bank, 2004). Targets, goals and objectives must be set with consultation from all relevant stakeholders and success must be defined (OECD, 2003). Evaluation of e-government projects is essential as it assists the implementers in measuring the achievement of their objectives and in decision making regarding termination or the upscaling of projects.

Kanishka and Deng (2012:46) state four approaches that can be identified in e-government evaluation. These include a readiness assessment, an availability assessment, an uptake assessment, and an impact assessment. A readiness assessment assesses the extent of a society's readiness for e-government implementation, while the availability assessment approach assesses the availability of e-government channels. The uptake assessment measures the extent of utilisation of e-government channels, and the impact assessment investigates the overall effect of e-government implementation.

Evaluation of e-government projects is no easy task and the OECD (2003:135) has identified some of the possible obstacles encountered, such as a lack of clarity in objective setting, the setting of overly ambitious goals, and the lack of good indicators.

2.9.10 Regulatory and legislative framework

E-government implementation must be accompanied by the enactment of legislation and regulations that are favourable to e-government. "*E-government requires [a] well defined regulatory framework and legal measures as an essential means for success"* (UNESCO, 2005:52). If legislation concerning digital signatures, digital identification, and data protection is attended to, it will create an environment conducive to the adoption of e-government (ITU, 2009:6). It is therefore imperative that, when a country is adopting and implementing e-government, necessary legislative frameworks are developed to support such initiatives. "*The success of e-government initiatives and processes are highly dependent on government's role in ensuring a proper legal framework for their operation"* (OECD, 2003:48). If

governments do not take a lead in formulating legislation that protects people's privacy when operating online, this will hamper the progress of e-government in a nation. Cyber security has thus become an important issue in e-government implementation. Cyber security is defined as "*the vulnerability of computer systems, including internet, websites and mobile networks, against unauthorised access or attack, or the policy measures taken to protect them*" (World Economic Forum, 2011:22).

2.10 Drawbacks and Challenges for E-government and its Implementation

There are many drawbacks and challenges that may hamper e-government, such as inadequate communication and power infrastructure, shortage of ICT skills and facilities, a digital divide, lack of training resources, inadequate private public partnerships, and reluctance and resistance by senior management to migrate to digital platforms.

Developing nations seem to face many more challenges in e-government implementation than developed nations. Grunde (2009:37) notes that "*it is a poorly kept secret in the computer industry that information systems are more likely to fail than succeed"* but the failure rate of e-government projects in developing countries is "*a real and a practical problem*". Estimates of the failure rate of e-government projects in developing countries and mainly in African countries range between 60-80% (Gant, 2008:30). This is because of some underlying conditions that may prevail in such countries. Schuppan (2009:119) believes that developing countries, and especially those in sub-Saharan Africa, are underdeveloped to ensure effective implementation of e-government. Heeks (2001:17) attributes the failure of e-governance projects to two main reasons: lack of e-readiness and design-reality gaps.

One of the main challenges faced by developing countries in e-government projects is the digital divide. This concept, as noted by Lau (2007:48), refers to the gap between those that have skills and access to use ICT and those without. Kasusse (2005:15) believes that the digital divide in Africa and in other developing countries

"*is also a mental divide, defined by illiteracy, command of English and feelings of ease and familiarity with these technologies*". Parston (2010:4) points out that if *"e-governance programs are to be successful, it is essential that as many citizens as possible can access and use the offered digital media channels".* There is a possibility that, if this issue is not attended to, e-government projects will only benefit the elite and not the ordinary citizens.

2.10.1 Bridging the digital divide

Many e-government projects are based on the assumption that citizens will have the "*resources, understanding and the skill to access electronic networks*" (Bellamy, 2009:136). However, the poor standards of living in developing nations create a digital divide. This means the majority of the citizens in such countries fail to access or afford ICTs.

There is a huge difference between developed and developing nations in terms of access to the internet. It is noted that "*more than 75% of Australians file income taxes online"* (Chen, Chen, Huang & Ching, 2006:26). This shows that the majority of this population has access to internet services. However, in many developing states, access to the internet is very limited, as indicated in Table 2.3, and it is worsened by a lack of "*capabilities to use information technologies*" (Van den Berg, Van der Meer, Van Winden & Woets, 2006:218). Governments should therefore create policies and initiatives that will bridge the digital divide. These initiatives might include the provision of free internet access to citizens in public places, such as libraries and post offices, or creating internet kiosks across the country.

Many developing nations are characterised by poor rural people who live in remote places, cut off from technological advancement. It is imperative for governments in developing countries to embark on projects that will ensure the inclusion of such groups in e-government projects. A successful example can be seen through the introduction of internet kiosks in rural areas in India, where farmers no longer have to travel far to get fair prices for their produce (Gant, 2008:9).

The city of Tampere, Finland, is also a great example of the measures that can be taken to bridge the digital divide. The city is said to have founded an internet café

that charges lower rates. Seventy free internet kiosks have also been established in schools, libraries and universities. The city has invested in an internet bus that travels across the city. (Bellamy, 2009:146). This shows an earnest interest to make sure that almost everyone benefits from e-government.

Kundishora (2010:4) also believes that another strategy to narrow the digital divide is focused utilisation of ICTs in education. This in turn produces e-literate citizens who have the ability and confidence to use ICTs in their dealings with the government.

Table 2.3 World Internet Statistics

WORLD INTERNET USAGE AND POPULATION STATISTICS June 30, 2012						
World Regions	**Population (2012 Est.)**	**Internet Users Dec. 31, 2000**	**Internet Users Latest Data**	**Penetration (% population)**	**Growth 2000-2012**	**Users % of table**
Africa	1,073,380,925	4,514,400	**167,335,676**	15.6 %	3,606.7 %	7.0 %
Asia	3,922,066,987	114,304,000	**1,076,681,059**	27.5 %	841.9 %	44.8 %
Europe	820,918,446	105,096,093	**518,512,109**	63.2 %	393.4 %	21.5 %
Middle East	223,608,203	3,284,800	**90,000,455**	40.2 %	2,639.9 %	3.7 %
North America	348,280,154	108,096,800	**273,785,413**	78.6 %	153.3 %	11.4 %
Latin America/ Caribbean	593,688,638	18,068,919	**254,915,745**	42.9 %	1,310.8 %	10.6 %
Oceania/ Australia	35,903,569	7,620,480	**24,287,919**	67.6 %	218.7 %	1.0 %
WORLD TOTAL	**7,017,846,922**	**360,985,492**	**2,405,518,376**	**34.3 %**	**566.4 %**	**100.0**

Source: World Internet Statistics website (2013)

Table 2.3 shows statistics that reveal the disadvantaged position of developing nations. Africa and Asian countries have the least penetration of internet usage.

2.10.2 Lack of skilled expertise

Another obstacle that may hinder effective e-government implementation is lack of skilled expertise. Misuraca (2007:64) believes that "*positive attitudes, knowledge and*

skills need to be in place". Many developing countries, however, are characterised by a lack of skilled expertise to implement e-government projects. Chen, et al. (2006:27), point out that those developing countries usually have weak human assets because workers lack required skills and expertise. In developing countries there is usually "*an inadequate human resource base trained to handle e-government projects"* (Maiga & Nabafu, 2012:33). For e-government projects to be successful, skilled expertise within the government in fields like information systems, website development and maintenance and computer security systems are required, among others. If this expertise is not available in public organisations then outsourcing from the private sector can be an option.

Unfortunately, the economic status of most developing states makes even outsourcing unaffordable and therefore governments will not progress in their e-government projects. It is advisable for developing countries to invest in developing their human capital in careers that are relevant to e-government, such as computer sciences.

2.10.3 Lack of technological infrastructure

The other defining characteristic of developing countries is a lack of technological infrastructure required to make e-government function. Kundishora (2010:6) believes that there is a shortage of communication and power infrastructure in many developing nations. This lack of technological infrastructure is mainly due to the scarcity of resources in developing nations and the few available resources have to be used to "*feed, house, nurse, employ, educate and protect its citizens*" instead of investing in technological infrastructure (ITU, 2009:11). According to the 2012 UN Survey, one of the challenges that affect the development of e-government in Africa is lack of infrastructure, and Africa remains at the tail end of the digital divide because of this. Chen, et al. (2006:28) points out that there is also usually reluctance in developing countries to invest in expensive e-government projects.

However, if developing states want to implement successful e-government projects, they must be ready to allocate meaningful budgets for sound ICT infrastructure because "*effectiveness of the e-government services in reaching citizens and*

business depends greatly in the availability of ICT infrastructure" (ITU, 2009:6). Availability of ICT infrastructure is thus becoming an element of "*social justice and social welfare"* (World Economic Forum, 2011:26). Governments are therefore expected to play their role in ensuring their availability.

2.10.4 General low literacy levels

Low literacy levels will surely affect the success of e-government in lesser developed states. Cloete, Wissink and de Coning (2000:88) points out that another characteristic of lesser developed states is the fact that they "*normally have larger numbers of illiterate, poorly educated people".* High levels of illiteracy in developing nations will also increase the unwillingness to adopt e-government as most of the e-government content is presented in a foreign language (Nabafu & Maiga, 2012:33).This form of illiteracy also extends to digital illiteracy that exists both for the citizens and government employees. This will hamper e-government development as people will not be comfortable to use ICTs.

It is therefore advisable for governments of developing countries to invest in projects that will improve both the general and digital literacy of their citizens**.** This can be done through the provision of free basic computer literacy and general literacy training.

2.10.5 Erratic power supply

Another challenge that may hamper development of e-government in developing nations is an irregular power supply. ICTs are powered by electricity, and if there are no solid energy policies that will ensure availability of electricity, this will hamper e-government projects (ITU, 2009:6). Asogwa (2011:54-55) believes that the irregular supply of electricity in Africa, and at times non-existence of electricity in rural areas, will surely hamper e-government projects.

Governments have to address policies in the energy sector if they are to be successful in implementing e-government projects, and especially electrification programs in remote areas should receive priority.

2.10.6 Fear of ICTs by government managers

The implementation of e-government can also be derailed by a fear of ICTs by senior managers. Culbertson (2004:61) believes that some senior managers may fail to appreciate the benefits of e-government. This is usually because those managers are digitally illiterate and fear that the introduction of such technologies in the workplace will expose them as inefficient. Senior managers may also fear the implementation of e-government because of the pressure to deliver that it seems to impose on public organisations.

Training sessions with senior managers on digital literacy and on e-government are essential as they will help resolve this fear.

2.10.7 Competition with other objectives

E-government is also deemed to be inappropriate in developing nations that are grappling with poverty and failing to deliver basic services, such as water, food and health. It seems that in such circumstances investment in ICTs is a waste of resources that may be channelled into improving service delivery. *"When making decisions about supporting e-government services many government leaders are concerned about trading off using scarce resources to feed, house, nurse, employ, educate and protect its citizens with making investments to develop internet access, purchase computer equipment and software applications"* (ITU, 2008:9).

However, if these leaders realise the benefits of e-government they will understand that ICTs are capable of increasing efficiency in their service delivery and this in turn will lead to reduced costs. The saved costs can then be channelled to all the other basic objectives.

2.11 E-government at Municipal Level

E-government at local level is proving to gain momentum as evidenced by the mushrooming of various municipal websites even for remote local districts. In many countries it is the local municipalities that are directly involved in service delivery and many municipalities are realising the advantages of digitalising their activities.

However, as will be noted from the preceding analysis, municipalities from developed states have more developed infrastructure and are making big strides in e-government implementation. This is in contrast to examples of developing states that are hindered in the efficient implementation of their e-government projects. There are a few examples of municipalities in developing countries who have fared better though, and these can serve as examples to other developing nations, demonstrating that it is possible to carry out successful e-government projects that can transform service delivery.

2.11.1 Local e-government in developed states

Many cities in developed states have managed to build sophisticated local e-government systems over the years. This is evidenced by the results of the Municipal Digital Governance Survey that has been carried out every two years since 2003 by Rutgers University in collaboration with other stakeholders. In all these years developed countries have managed to take the leading positions in the surveys, as shown in Table 2.4.

Many local governments in developed nations are now at the transactional stage wherein citizens are able to pay for essential services. The city of Manchester in the United Kingdom is one such example – its city web portal enables citizens to pay for taxes online and they can also pay for other services, like birth, marriage and death certificates (Manchester City Website, 2014). A detailed analysis of Seoul city, which has been ranked the number one digital city for five consecutive years, will follow and the details of its e-government projects will be examined to determine what made them excel in their e-government projects (Seoul Metropolitan Government, 2013:8).

Table 2.4 Digital Governance for Cities from 2007-2011

	2007		2009		2011	
Rank	City	Score	City	Score	City	Score
1	Seoul	87.74	Seoul	84.74	Seoul	82.23
2	Hong Kong	71.24	Prague	72.84	Toronto	64.31
3	Helsinki	71.01	Hong Kong	62.83	Madrid	63.63
4	Singapore	68.56	New York	61.10	Prague	61.72
5	Madrid	67.98	Singapore	58.81	Hong Kong	60.81
6	London	65.79	Shanghai	57.41	New York	60.49
7	Tokyo	59.89	Madrid	55.59	Stockholm	60.26
8	Bangkok	59.01	Vienna	55.48	Bratislava	56.74
9	New York	56.54	Auckland	55.28	London	56.19
10	Vienna	53.99	Toronto	52.87	Shanghai	55.49
11	Dublin	53.38	Paris	52.65	Vilnius	55.35
12	Toronto	51.99	Bratislava	52.51	Vienna	54.79
13	Berlin	51.36	London	51.96	Helsinki	54.22
14	Zurich	51.02	Jerusalem	50.64	Auckland	53.19
15	Prague	50.34	Tokyo	50.59	Dubai	53.18
16	Buenos Aires	49.89	Zagreb	50.16	Singapore	52.21
17	Bratislava	49.82	Ljubljana	49.39	Moscow	51.77
18	Sydney	48.60	Lisbon	48.82	Copenhagen	50.06
19	Amsterdam	47.72	Brussels	48.01	Yerevan	49.97
20	Rome	46.98	Johannesburg	47.68	Paris	48.65

Source: Holzer and Manoharan (2012:9)

Table 2.4 reveals that for six consecutive years from 2007 to 2011, only developed nations topped the ranking of local e-government.

2.11.1.1 Seoul city e-government

Seoul is the capital city of South Korea, a developed nation. Over the past few years it has managed to build an e-government system that is emulated worldwide. The metropolitan of Seoul is now becoming more oriented to m-government and it is "*proactively promoting across the board, mobile oriented administrative services to*

provide citizens with real time public services anytime, anywhere on their mobile devices" (Seoul Metropolitan Government, 2013:13). This approach aims to offer government services to the citizens everywhere and at any time without any limitations and Seoul city has managed to build a system whereby they can basically offer all essential services through mobile platforms.

Seoul city owes its e-government success to the establishment of sophisticated infrastructure, having e-government champions, and also involving citizens as important stakeholders in their e-government projects. Building a supporting infrastructure is one of the fundamental steps in e-government implementation. Seoul city has managed to develop its own telecommunication network and establish information systems that connect all its public services. It has managed to *"set up a total of 477 types of information systems",* which are controlled by the data centre (Seoul Metropolitan Government, 2013:10). Seoul metropolitan city also managed to establish fibre optic cables around the city (Seoul Metropolitan Government, 2013:11).

E-government projects require people in higher office who can champion their cause. Dedicated and committed leadership must be a priority. Seoul city has managed to get this right, as since 2003 they have appointed a chief information officer (CIO) who has championed the causes of e-government and, through his leadership, they have managed to create an e-government promotion group (Seoul Metropolitan Government, 2013:10).

Seoul city has also managed to actively engage its citizens in e-government projects that are tailored to suit the needs of the citizens. The transition to m-government was done after realising that many citizens were accessing public services through mobile devices (Seoul Metropolitan Government, 2013:13).

The Seoul metropolitan city also started initiatives to ensure that citizens have unrestricted access to e-services. They established free Wi-Fi access to citizens and there are about 1 057 access points of Wi-Fi that have been built around the city, especially in public places like parks and markets. There are also free mobile charging places that have been established around the city. Efforts have been made to ensure that underprivileged groups are not left out in e-government projects and

every year the city's government donates second-hand computers to such groups (Seoul Metropolitan Government, 2013:22-23).

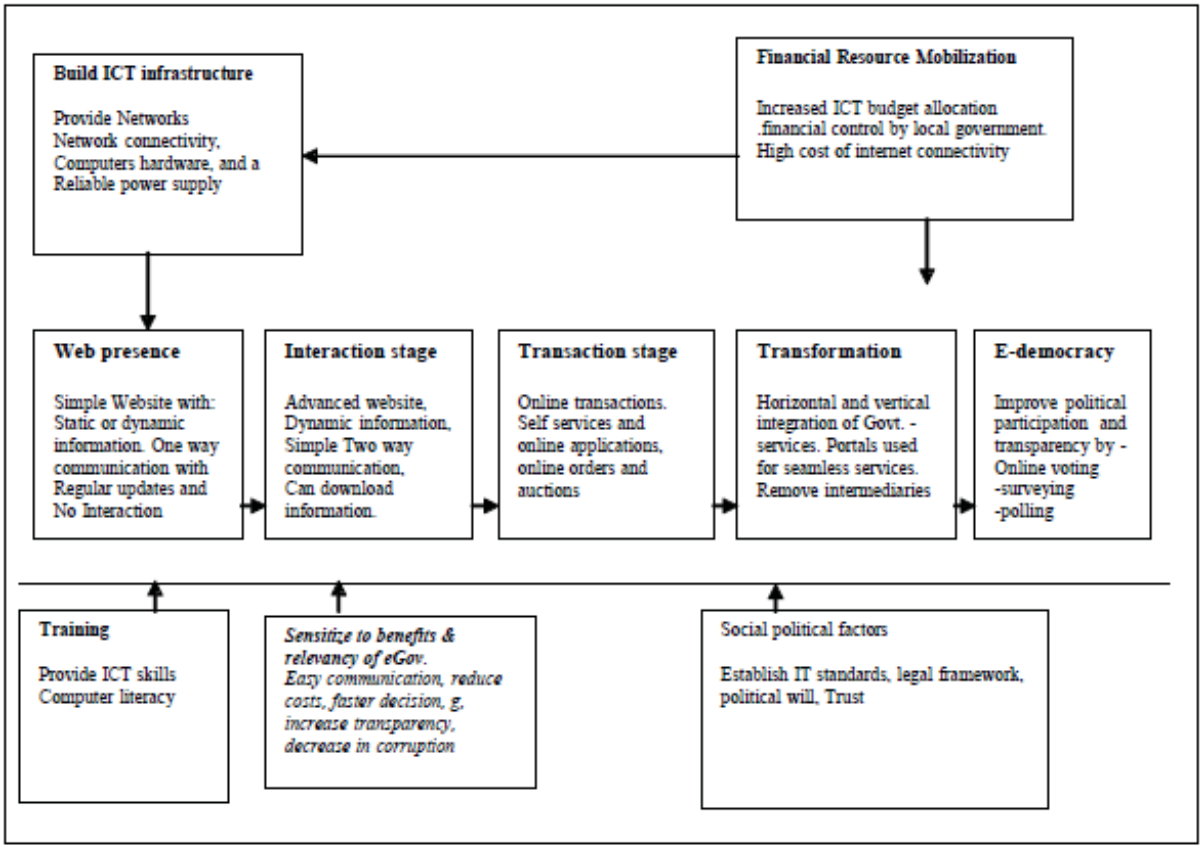
The example of Seoul city gives hope to Local Government entities, demonstrating that it is possible to build a viable e-government system. Many practical lessons can be drawn from Seoul's example and can be replicated elsewhere with equal success.

2.11.2 Local e-government in developing nations

Local e-government in developing nations has not been associated with much success, although there are a number of successful projects that can be identified. Many local e-government projects in many developing countries are still in the first or second phase of e-government stage development models. Maiga and Nabafu (2012:287) believe that developing nations' lack of success in e-government projects is due to the fact that they are trying to implement e-government according to models developed mainly for richer countries. These models will not work for developing countries unless they are tailor-made to suit their conditions (Maiga & Nabafu, 2012:288).

The e-government implementation models that are developed usually show the developmental stages as a linear process that is easy to implement from one stage to the other; however, Maiga and Nabafu (2012:288) believe that there are other underlying issues in developing countries that must be given priority when implementing e-government at a local level. These factors include dimensions of financial constraints, ICT infrastructure, sensitisation, training, as well as social and political factors. These dimensions must be included in the implementation models for local e-government in developing nations. Using Siau and Long's 2004 E-government Implementation Model as a basis, Maiga and Nabafu came up with their own model that they believe works for developing nations, as shown in Figure 2.1.

Figure 2.1 E-government Implementation Model for Developing Countries



Source: Maiga and Nabafu (2012:301)

One e-government project at local level from a developing country context will be analysed briefly below. This example was specifically chosen because it is a pilot project implemented in a typical developing country context, and findings will be useful for many cities in the same situation. This example will explicitly show the challenges that developing nations face but will also reveal the transformation that e-government projects can bring to local governance.

2.11.2.1 E-government project in Fez Morocco

Fez is a city in Morocco, which is a developing country in North Africa. According to Wikipedia (2014a), Fez is the third largest city in Morocco and by 2010 its population was approximately one million people. The city of Fez started implementing e-government in 2004 with the help from the ICT for Development (ICT4D) Laboratory

at Al Akhawayn University in Ifrane, and the project was sponsored by the International Development Research Council (IDRC) (Kettani & Mahdi, 2010:4).

The research team and the city officials decided to focus first on 'bureau d'é tat civil' (BEC), which are government offices responsible for keeping records of citizens' life events, such as birth, divorce, marriage and change of names. Initially the project aimed at one office in Fez, the administrative centre of Agdal and only focused on the delivery of birth certificates. Prior to this project the city of Fez was an 'archaic' district that used to process all its operations manually. Citizens would travel to offices to access services – a cumbersome and frustrating process as applying for a birth certificate would take up to ten days (Kettani, 2010:9-10). However, this project has long since spread to nineteen BEC offices and now includes all life events and these offices have virtually "*abandoned manual service delivery altogether*" (Kettani & Mahdi, 2010:11).

The aim of this project was to simplify and accelerate the process of acquiring birth certificates for citizens. The city officials and the research team were interested in front office e-government to transform the way services are delivered to citizens. However, a quick analysis revealed that it was not feasible to do so without a prior transformation of the back office. All the citizens' documents were in paper format and there was no existing ICT infrastructure that could sustain such a project. Therefore, effort was dedicated to digitising the back office through computerisation, building network systems, and ensuring consistent electricity supply. Citizens' records were transferred from paper documents into a database, which was a time-consuming process. It was only after this that the city of Fez was able to offer their services electronically to their citizens (Kettani & Mahdi, 2010:3-5). Fez also managed to develop a wireless metropolitan area network that connects all its government offices (Kettani & Mahdi, 2010:16) and a data centre project was also started (Kettani & Mahidi, 2009:377). All these back office efforts have enabled the electronic delivery of services, and birth certificates and other documents can now be obtained through any one of these three ways:

1. Visiting a BEC office with one's information where the officials from these offices can print the certificates in a short time.
2. Use of internet touchscreen kiosks located outside the BEC offices, which offer self-service to citizens. Citizens enter information that identifies them and are able to print their birth certificate. These will require a signature from an official for verification purposes.
3. Use of the city's web portal where citizens log in and activate their membership with their BEC officer, enter their information, and their requests are then processed.

   (Kettani, 2010:26-27)

The e-government project in Fez proved successful in a developing country context. The city of Fez initially faced all the challenges likely to be encountered by developing country local government but they managed to overcome these. The project was a success and results from a survey revealed that the quality and speed of service delivery improved by 75% (Kettani & Mahidi, 2009:374). Both the citizens and the employees in government departments assented to the transformation that this project brought. This project can motivate other local governments in developing countries to build successful e-government projects, though it may call for much more effort than in developed states' contexts.

2.12 Conclusion

This chapter has shown that e-government has become such an important aspect of today's world that governments cannot overlook it and should instead devise strategies to make it viable in their countries. The benefits of e-government are so profound that it does not make economic, political or social sense for any government institution to continue the traditional way of governing.

However, it has also been noted that, for those benefits to materialise, there are important prerequisites for before and during implementation that, if overlooked, will decrease the benefits of implementation. It is crucial for governments to create conducive environments and eliminate all kinds of challenges if they are to progress.

Developing countries have proved to be facing most of these challenges but there is hope that, if they are committed, they are likely to be successful in their e-government projects and bring the much sought after transformation to their public services. Local governments must also prioritise e-government implementation as in many countries they are the government entities that are closer to citizens and directly involved in service delivery.

In the next chapter a broader perspective of e-government in Zimbabwe will be analysed. Focus will be given to the legislative framework that affects e-government and also to the national e-government initiatives.

CHAPTER THREE: E-GOVERNMENT IN ZIMBABWE

3.1 Introduction

This chapter will focus on a broader perspective of e-government in Zimbabwe. The main focus will be on analysing the factors essential in e-government implementation. This will include assessing the policy environment, ICT infrastructure status, and the general perception and commitment of the leadership in implementing e-government, among other factors. E-government projects that have been implemented at a national level will also be briefly analysed.

This chapter is essential to the whole study as it portrays the environment in which the HCC is implementing e-government. It will give a clear picture of whether e-government is being implemented in an e-ready society and whether there are good examples at the national level that HCC can draw some lessons from.

3.2 Background of E-government in Zimbabwe

E-government is not a new phenomenon in Zimbabwe. It is said to have started as early as 1972 when the Central Computing Services was created (COMESA, 2013). This involved the computerisation of the back office of government departments. However, e-government as a tool to provide services and information to citizens is still new in Zimbabwe.

The adoption of the IRBM system as an approach to public administration in 2006 in Zimbabwe has reignited the importance of e-government. IRBM was adopted after disappointment with the former approaches to public administration in Zimbabwe which, according to Munyaradzi (2012:3), led to an effective and inefficient public administration riddled with red tape.

3.2.1 Integrated results based management and e-government in Zimbabwe

The IRBM system adopted by the Zimbabwean government has stimulated the need to implement e-government at all levels of government institutions in Zimbabwe. IRBM, as noted by Madhekeni (2012:122), is "*a powerful tool that can be used to*

help policy makers and decision makers track progress and demonstrate the impact of a given policy, programme or project." The IRBM project in Zimbabwe is anchored on five major pillars, as related by a senior government official (Sibanda, 2010). These pillars are as follows:

- integrated development planning
- results-based budgeting
- results-based personnel performance system
- results-based monitoring and evaluation
- e-government

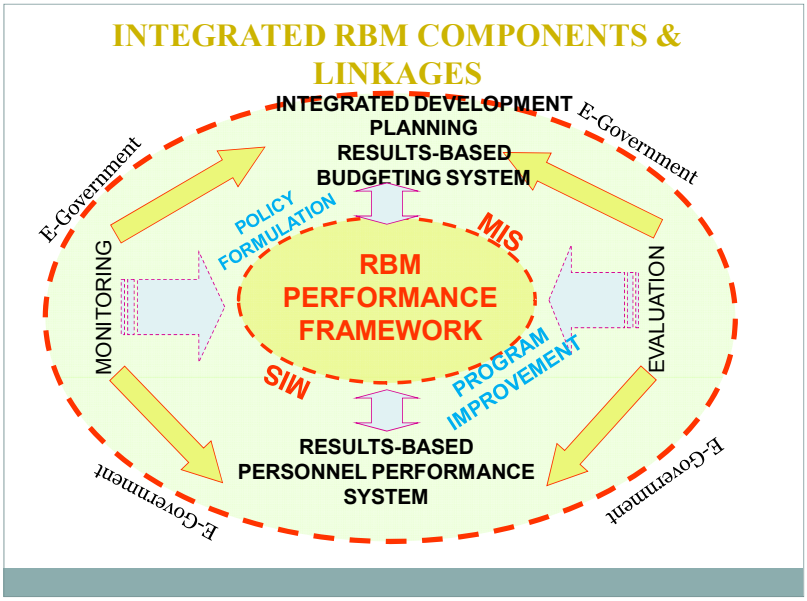


Figure 3.1 Components of Integrated Results Based Management

Source: Munyaradzi (2012:9)

All the pillars of IRBM can only be successful if they are supported by a mature and developed e-government system, as shown in the diagram above. E-government is therefore a very important component in the IRBM system and the Zimbabwean government, with some assistance from the United Nations, is eager to implement this approach to the fullest.

3.3 Key Players in E-government Implementation in Zimbabwe

There are a number of institutions in Zimbabwe that are directly and indirectly involved in e-government implementation and development. The Modernisation Department in the Office of the President and the Cabinet (OPC), and the Ministry of Information Communication Technology, Postal and Courier Services (MICTPCS) are the two major players in e-government in Zimbabwe. The Postal and Telecommunications Authority of Zimbabwe (POTRAZ) also has an influence on e-government development. There are also some quasi-governmental and non-governmental organisations (NGOs) that have made a profound impact on e-government development in Zimbabwe. These include World Links Organization and the Zimbabwe Academic Research Network (ZARNet).

3.3.1 Office of the president and the cabinet

The Office of the President and the Cabinet (OPC) is one institution that is directly involved with e-government in Zimbabwe. This office is mandated to "*be a provider of effective strategic leadership and policy guidance to the entire government machinery".* One of the stated functions of the OPC is to modernise the public sector in Zimbabwe and the Modernisation Department within this Office responsible for this function. It is this department that is directly involved with e-government activities in Zimbabwe and it works with all the other government ministries to implement the identified policies (Government of Zimbabwe, 2014c). The fact that the OPC is actively engaged in e-government development shows their appreciation of the value of e-government.

3.3.2 Ministry of Information Communication Technology, Postal and Courier Services (MICTPCS)

The MICTPCS is the other ministry that has a mandate on e-government in Zimbabwe. The creation of the Ministry of ICT in 2005 was the right first step towards e-government development. Initially, ICTs in Zimbabwe fell under the Ministry of Transport and Communications. The creation of the Ministry of ICTs as a separate entity shows how the leadership has realised the importance of ICTs.

The vision of this ministry, as elaborated on their website, is to "*act as a catalyst for national socio-economic growth, thereby propelling Zimbabwe into a knowledge society with ubiquitous connectivity by 2015".* The MICTPCS houses many departments which fulfil different functions, but the ones most relevant to this study are the Department of Infrastructure Development and Management, and the Department of Policy Coordination, Development and E-government, which is mandated to "*establish and manage the e-Government framework, structures, applications and services at all levels"* (Government of Zimbabwe, 2014a).

3.3.3 Postal and Telecommunications Regulatory Authority of Zimbabwe

The Postal and Telecommunications Regulatory Authority (POTRAZ) is another body whose activities influence the pace of e-government development. This organisation was established in terms of the Postal and Telecommunications Act and the functions and duties of POTRAZ are laid out in this piece of legislation. POTRAZ has been mandated to regulate the postal and telecommunications sector by laying out regulations that will promote standardisation, co-existence and harmony in the sector. It also has the mandate of issuing licences to companies operating in the field of posts and telecommunications (Government of Zimbabwe, 2000: s4).

The duties of POTRAZ are very relevant to e-government in Zimbabwe because its activities will permit fair competition in the ICT sector and this in turn will make ICT services affordable, preventing monopoly in this sector by any organisation that may result in unfair pricing of services. For effective e-government development, it is important to ensure that, as the government makes efforts to digitalise its operation, the service providers in the ICT sector also have a strong regulating body that ensures fairness in pricing and quality assurance.

POTRAZ is also mandated by the Postal and Telecommunications Act to oversee the Universal Service Fund. This fund was especially set up to ensure development of ICT infrastructure and human capacity, especially in underserviced areas (Government of Zimbabwe, 2000:s74). This is very important as e-government services should be available to all people, both in the cities and those in remote areas.

3.3.4 Zimbabwe Academic Research Network

The Zimbabwe Academic Research Network (ZARNet) is a quasi-governmental organisation that has an interest in e-government. ZARNet was created with the intention that it will work to "*facilitate internet connectivity to the academic and research institutions, non-governmental organisations and other disadvantaged communities throughout Zimbabwe*". However, its services have expanded to include government ministries and departments. The main aim of ZARNet is to promote digital literacy among Zimbabweans (Kundishora, 2010:10).

In 2010 ZARNet's vision was to ensure that, by the end of 2012, all the schools in Zimbabwe that have electricity would be computerised and connected to the internet (Zimbabwe Ministry of ICT, 2010:5). Ensuring digital literacy among citizens is a very important factor of e-government development as otherwise all the government's efforts to digitalise operations may be futile.

3.3.5 World Links Zimbabwe

World links was established in Zimbabwe in 1998 and it is an international organisation with branches in other countries. However, the Zimbabwean branch has evolved to be a stand-alone entity. World Links Zimbabwe's mandate is to provide ICT hardware to schools and also to train teachers so that they can incorporate ICT into their teaching techniques. World Links Zimbabwe introduced a mobile bus equipped with computers (Isaacs, 2007:6). In 2012 World Links Zimbabwe had managed to set up fifty-two telecentres around the country, though not all of them were functioning (Gondo, 2012).

3.4. E-government Policy and Regulatory Framework

There are many policies and pieces of legislation in Zimbabwe that affect e-government initiatives. The government of Zimbabwe (GoZ) has created notable initiatives through crafting policies and legislation that regulate and give strategic direction in e-government development. However, a clear analysis of the regulatory framework reveals much that needs attention. Of much concern is the fact that Zimbabwe has to date failed to launch a policy that promotes cyber security. There is

only a draft Computer Crime and Cybercrime Bill that must be put before the parliament before it becomes effective legislation (Tembo, 2013:1).

This is risky in e-government development as citizens and businesses alike will hesitate to transact online if there are no solid laws to protect them. The important documents in e-government development in Zimbabwe include the Postal and Telecommunications Act of 2001, the 2005 ICT Policy, the 2012 National ICT Draft Policy, the 2011-2015 Ministry of ICT Strategic Plans, the Zimconnect E-government Framework and Implementation Strategy, and the 2013-2018 Zimbabwe Agenda for Sustainable Socio-Economic Transformation (Zim Asset) Policy.

3.4.1 The Postal and Telecommunications Act of 2000

This is an important piece of legislation in e-government development in Zimbabwe as it opened a new chapter that took ICTs to a new level. This Act "*effectively ended the monopoly of the Post and Telecommunication Corporation*" (African Development Bank (ADB), 2012:1). For years prior to the enactment of this Act there was a monopoly in the ICT sector and only the government-owned Post and Telecommunication Corporation (PTC) had the mandate to operate in this field, which slowed progress in ICT development as it closed the doors to other interested operators. As stated earlier, the private sector can contribute effectively to e-government development as it can contribute to ICT infrastructural development. This Act introduced new players into the ICT field in Zimbabwe and these operators have contributed immensely as they managed to build infrastructure and provide services that are vital for e-government projects. Econet Wireless was the first company to break through into the telecommunications sector after the Postal and Telecommunications Act was passed and it was the first company to introduce mobile internet subscriptions in 2009 (Government of Zimbabwe, 2012:13).

3.4.2 Zimbabwe National Information and Communication Technology Policy Framework, 2005

The 2005 National ICT Policy is one of the existing documents that provide strategic guidance and direction to ICT development in Zimbabwe. The vision of this policy

framework is "*to transform Zimbabwe into a knowledge-based society by the year 2020".* In this policy there is a section that deals specifically with e-government and the following are the policy statements made pertaining to e-government.

The government shall:

- "*develop an e-government policy and legal framework*"
- *"ensure that every ministry/department develops and manages computerised information systems"*
- *"ensure that every government ministry and parastatal has an updated informative and interactive website"*
- *"create an e-government agency to coordinate and rationalise efforts by government entities working on ICTs"*
- *"make e-government services accessible to all citizens"*
- *"provide a systems security framework for e-government"*
- *"build capacity for e-government"*

To date most of these policy statements have not yet been fulfilled and the GoZ is still working to make them a reality.

3.4.3 The national draft information and communication technology

The GoZ realised that the 2005 ICT policy was becoming obsolete since technology is ever changing, creating a need for a new policy framework. Deliberations have been made and these resulted in the creation of a draft policy that needs approval from parliament. This policy framework is much like the current ICT policy with some new additions. Clauses in this draft policy that focus on e-government are similar to those stated in the 2005 ICT Policy. The fact that the objectives are still the same seven years after the crafting of the first policy shows that nothing much has been done to fulfil these objectives.

3.4.4 Ministry of Information Communication Technology Strategic Plan, 2010-2014

In 2010 the MICTPCS issued a strategic document that outlines the ministry's objectives, and approaches on how to achieve them. The stated vision of this strategic document is "*to act as a catalyst for national socio-economic growth thereby propelling Zimbabwe into a knowledge society with ubiquitous connectivity by 2015".* This policy document is detailed and shows a higher level of commitment to putting Zimbabwe on the map in terms of ICT development.

However, what really matters is to see those goals and objectives realised in the given timeframes. There are a number of stated goals in this document that have direct bearing on e-government development. This includes the goal of developing and managing an appropriate infrastructural system, of developing an e-government and e-business system, and the goal to create a safe cyber environment, as shown in Table 3.1. The ministry of ICT also identified some quick benefits that they realised would accelerate development in the ICT sector as follows:

1. Ministry website development.
2. Development of communications infrastructure.
3. ICT capacity building and an ICT government school.
4. Establishment of a pilot information centre.
5. Provision of computers to ministers, permanent secretaries and commissioners.
6. E-government.
7. One computer per classroom.
8. Last mile connectivity.
9. Establishment of national digital archives.
10. Establish an ICT committee.

(Government of Zimbabwe, 2010a)

The ministry also set timeframes for the enactment and implementation of some important legislation. The intended goals were to enact an ICT Bill by 2010, to have an approved e-government framework by 2011, have an internet policy implemented by 2011, and a cyber policy by 2011 (Government of Zimbabwe, 2010a:23). An

analysis of the current situation shows that not all of this was achieved. The ICT bill and the cyber policy are still unapproved drafts.

Table 3.1 Goals of the Ministry of Information Communication Technology Postal and Courier Services

KEY RESULT AREA	GOAL
Infrastructure establishment, development and management. E.g. Connectivity, optic fibre, VSAT, wireless, wireline, VOIP, and so forth.	Develop, establish and epitomise a sustainable ICT infrastructure and broadband. Develop and expand cross border interconnections and access to internet backbone.
E-government and e-business,,e.g. e-government portal, e-commerce frameworks, e-learning, and national payment systems.	Develop an e-government platform, communication portals, digital archives and community information centres. Establish an e-business framework and community connectivity with e-services countrywide.
Security and quality assurance framework, e.g. interoperability and quality of service.	Ensure security in the cyber environment. Ensure compliance with international best practice and standards.

Source: Adapted from Government of Zimbabwe (2010a:18-19)

The national ICT strategic plans are premised on the need to establish ICT infrastructure and also on the establishment of e-government and e-business systems. The need for creating security systems is also elaborated in this document.

3.4.5 Zimconnect E-government Framework and Implementation Strategy (2011-2015)

The GoZ has managed to formulate a strategic document on e-government. The Zimconnect document was developed to guide the government's implementation of e-government projects. The stated vision in this strategic document is: "*To provide seamless e-services to the citizens, business and government through an interconnected public service integrating people, process and technology*" (Mhlanga, 2013:21).

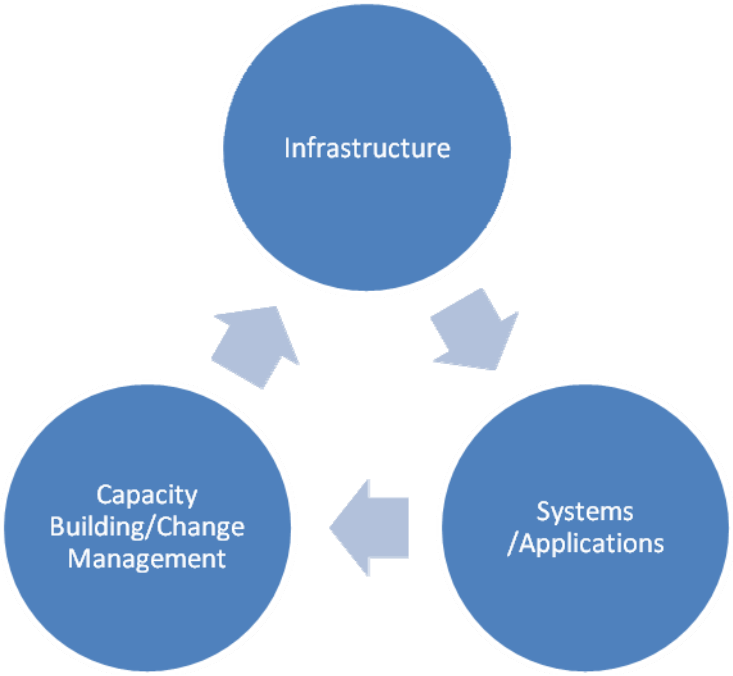


Figure 3.2 Components of E-government Development in Zimbabwe

Source: Mhlanga (2013:17)

The three main components of this vision are infrastructural development, human skills development and systems development, as shown in Figure 3.2.

The objectives of the E-government Framework and Implementation Strategy are to improve service delivery, improve revenue collection, reduce costs and to give citizens a voice (Mhlanga, 2013:16).

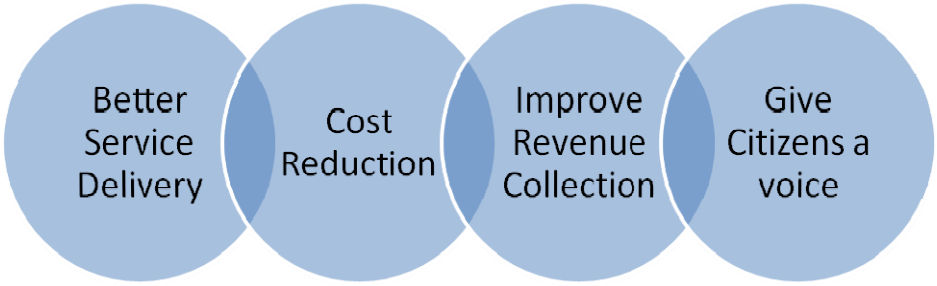


Figure 3.3 Objectives of E-government in Zimbabwe

Source: Mhlanga (2013:21)

The objectives of e-government in Zimbabwe reflect what the nation wants to achieve through e-government implementation. The objectives give a preview of the benefits that will come with e-government.

3.4.6 Zimbabwe Agenda for Sustainable Socio-Economic Transformation (Zim Asset)

The GoZ has also formulated a strategic document that they believe will turn around the socio-economic situation of the country from 2013 to 2018. The Zimbabwe Agenda for Sustainable Socio-Economic Transformation (Zim Asset) also deals with ICT and e-government development and there are a number of objectives they wish to achieve by the end of the given timeframes. Some of the objectives relevant to this study include the following:

- ICT policy revised
- internet policy developed
- e-government policy developed
- optic fibre linking major cities and towns laid

- last mile connectivity through the PFMS (Public Finance Management System), installed in 20 districts
- national data centre established
- government systems automated

(Government of Zimbabwe, 2013d:88-90).

If these policy objectives are achieved they will improve the state of e-government in Zimbabwe.

3.5 The State of ICTs in Zimbabwe

There are several factors that can be assessed to ascertain the state of ICTs in a country. These include the status of ICT infrastructure, level of ICT literacy, penetration and usage within the country, as well as the human capacity skill within this sector. This section assesses these fundamental factors to get a clearer picture of the state of ICTs in Zimbabwe.

3.5.1 ICT infrastructure in Zimbabwe

ICT infrastructure is an indispensable aspect of e-government development as it greatly affects its pace. The infrastructure consists of *"tools, hardware and physical structure that allow for connectivity and interconnectivity"* (Government of Zimbabwe, 2012:21). Zimbabwe's ICT infrastructure is currently owned by both private and public entities and this includes both the backbone structure and the access network.

The backbone structure is weak as the current base stations are mainly concentrated in towns and not remote areas (ADB, 2012:12). The fibre optic cables are not yet fully developed, as shown in Table 3.2. This table clearly reveals that the development of optic fibre cables has been mainly in major towns and this promotes the digital divide as those in remote areas will be left out of the digital advancement.

Table 3.2 Status of Optic Fibre Links in Zimbabwe

Operator	Backbone fibre Link	capacity	Status
Powertel	• Harare-BYO- Plumtree-Botswana	STM 16	Completed
	• Harare- Mutare - TDM	STM 16	Complete
Econet/Liquid Telecom	• Harare-Masvingo-Beitbridge- South Africa	STM 64	Complete
	• Harare-BYO- Beitbridge – South Africa	STM 64	Work in progress
Tel One	• Harare-Mutare-Mozambique	STM 64	Complete
	• Harare-Mazoe-Chinhoyi	STM 16	Complete
	• Harare-Chinhoyi-Makuti-Chirundu-Zambia	STM 16	Complete
	• Masvingo-Beitbridge-South Africa	STM 64	Work in progress
	• Harare-Gweru- Bulawayo-Beitbridge	STM 64	
Africom	• Harare-Mutare-Mozambique	-	Work in progress

Source: Baxton (2011:11)

Electricity is another important component that must be factored in when considering ICT infrastructural development as, without a reliable supply of electricity, all other efforts in ICT development will be futile. Zimbabwe does not have a reliable supply of electricity and this has a negative impact on ICT projects. Ruhode, Owei and Maumbe (2008:166) note that "*Zimbabwe has a critical shortage of electricity which is one of the inhibiting factors in rolling out ICTs to the whole country*". The Rural Electrification Program has made some progress but there are still many remote areas that have no access to electricity and in urban areas there is serious load shedding, which negatively affects ICTs.

3.5.2 Mobile and internet penetration

Mobile and internet penetration has significantly improved in Zimbabwe over the past few years. Recent statistics from POTRAZ for the year ending 2013 show that mobile penetration in Zimbabwe has shot to 103.5%. Zimbabwe has a population of 13 600 000 million people and currently there are a total of 13 518 887 million mobile subscribers (Kabweza, 2014). Internet penetration has also steadily improved from 33.4% in 2012 to 39.8% in December 2013. There are currently about 5.2 million internet subscriptions. This steady improvement can be attributed to the lowering of

internet tariffs and the easy access of internet capable phones mainly imported from Asian countries and sold at a much reduced price (Kabweza, 2014).

3.5.3 Human capacity skills

Human capacity skills are an important aspect of ICT development. The country might have the necessary resources but if there is a lack of required human skills then progress will be stalled. Zimbabwe was properly resourced with ICT workers in the past but due to its economic crisis there has been a major 'brain drain' that has left a significant gap in the ICT sector (ADB, 2012:16). It is vital that efforts be made to intensify ICT training in the country.

3.6 E-government Initiatives

The GoZ has engaged itself in some e-government projects that are proving to be beneficial but progress is very slow. Zimbabwe has been ranked at number 133 out of 189 in the United Nations E-government Survey (UN, 2012:16). This is down from the previous UN ratings in 2010, which placed it at number 129. The main reason for this is the slow pace of implementation. The leadership appears to understand what needs to be done, as attested by the elaborate strategic documents they have produced, but there is clear lack of commitment to implementing the projects.

3.6.1 Website development

The design and development of a government web portal is one of the first major steps for front office e-government implementation. Ruhode, Owei and Maumbe (2008:167) believe that "*the use of an integrated web-portal is increasingly becoming an important component of the e-government infrastructure*". The GoZ has developed an online web portal that integrates most of the government ministries and agencies. Most of these websites are still in the first and second stages of e-government development as they are mostly informational and only allow the downloading of some documents. The Zimbabwean Web Portal can be found at http://www.gov.zw.

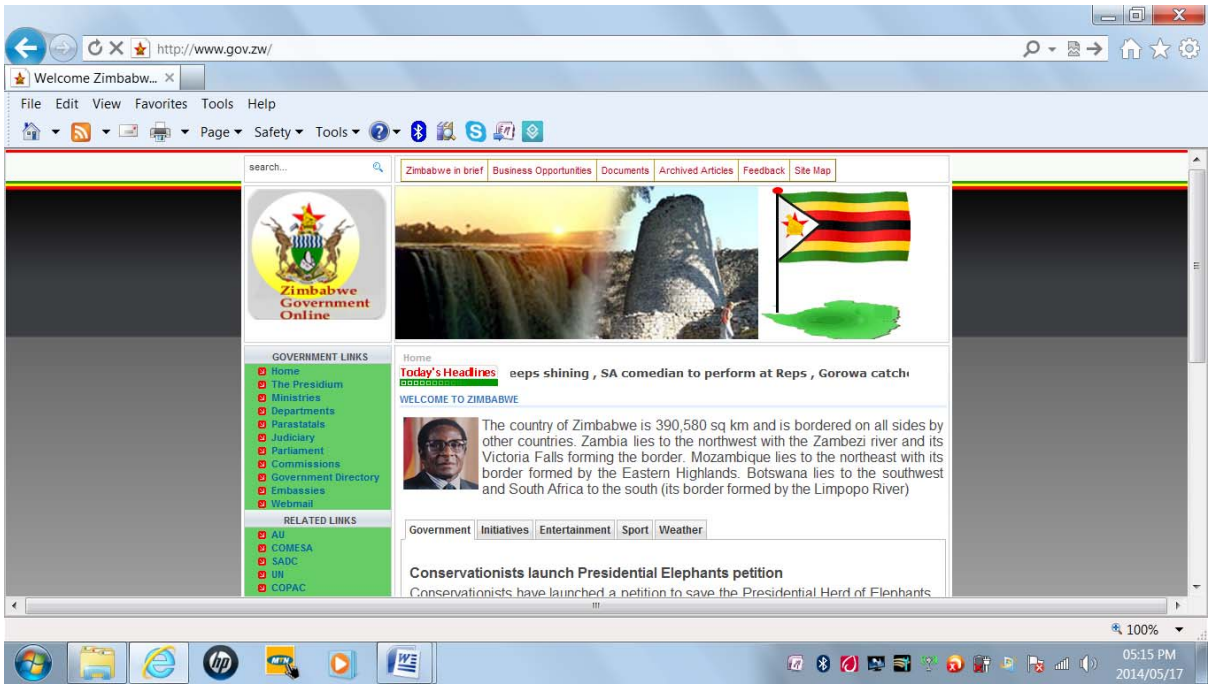


Figure 3.4 Zimbabwe Web Portal

Source: www.gov.zw

3.6.2 Creation of a government ICT school

The GoZ realised the importance of having digitally literate civil servants and created an ICT training school at the central bureau and also in Bulawayo. The then Minister of ICT, Hon Chamisa, said the ministry was attempting to transform the country "*from a techno-phobic to techno-savvy society".* This process has also seen cabinet ministers and their permanent secretaries receiving personal laptops from the ministry of ICT and they promise that this process will cascade down to lower ranks of civil servants (New Zimbabwe, 2011).

3.6.3 Automation of government operations

The operations of many government entities in Zimbabwe are mainly manual, and citizens have to go from one office to another to access services. Most information over the years has been saved on paper, creating piles of files in offices. However, there has been a recent attempt to automate most government functions. This has mainly been done on the Systems Applications and Products (SAP) Platform. SAP applications are an international brand but can be tailor-made to suit the needs of an

organisation. They are *"built around their latest R/3 system, provide the capability to manage financial, asset, and cost accounting, production operations and materials, personnel, plants, and archived documents. The R/3 system runs on a number of platforms including Windows 2000, and uses the client/server model. The latest version of R/3 includes a comprehensive internet-enabled package*" (Rousse, 2009).

The SAP application was adopted by the GoZ and is used to digitalise the back office systems. The only challenge is that most government entities, especially at district levels, do not have access to computer hardware and electricity, hence they cannot benefit from SAP applications. The Public Finance Management System (PFMS), managed by the Ministry of Finance, has also managed to automate the government financial accounting system. This system links the treasury with the line ministries (Zinyama, 2013:270). The PFMS is now only available up to the provincial level and the aim is to extend it to at least twenty district levels by 2018 (Government of Zimbabwe, 2013c:88). The other automated systems include the civil service payroll, the national registration system and the processing of pensions (Ruhode, Owei & Maumbe, 2009:167). The automation of government activities has just started and is now mainly concentrated at head offices and provincial offices. It is very important for this project to be extended to district offices.

3.6.4 National e-learning program

The GoZ has also embarked on a national e-learning program that aims to transform the traditional way of imparting knowledge to students. The Ministry of ICT and the Ministry of Education launched this program in 2012 at Chogugudza Primary School in Mashonaland East and they are determined to make sure that every government school will be digital by 2014. All the teaching staff at Chogugudza Primary School underwent training to equip them with the necessary ICT skills to enable them to deliver their curriculum (ITU, 2012).

It is a brilliant program but unlikely to be achieved by the set time because there are many schools in Zimbabwe that are underdeveloped and do not have the basic structures required for setting up computer laboratories (Dube, 2012). The OPC, in conjunction with the government of India, has also created free internet kiosks in

three cities so far, namely Harare, Bulawayo and Mutare. These kiosks have educational websites and they are modelled along the 'Hole in the Wall' concept. They are solar powered and thus unaffected by electricity power cuts. The researcher visited the internet kiosk based at Highfield Library in Harare and witnessed many school children taking turns to use the free internet for educational purposes.

3.7 E-government Flagship Institutions

There are several institutions that have been selected for flagship e-government projects. These institutions include Chitungwiza Hospital, the Ministry of Mines and Mining Development, Zimbabwe Investment Authority (ZIA), and the Liquor Licensing Board. The ZIA e-government system is said to be near completion and will create an online registration system for investors (Herald, 2014). Zengeni (2015) points out some applications under the e-government initiative that have gone live. These applications include the Land Information Management System, the online liquor licence, the online prospecting licence for the Ministry of Mines, the online company registration and deeds, and the e-visa application.

3.8 Challenges

E-government initiatives in Zimbabwe have faced their fair share of challenges. Zimbabwe as a developing country faces some resource challenges and this has negatively affected e-government projects. In an interview, the previous Minister of ICT, Nelson Chamisa, points out those inadequate resources were negatively affecting their projects. He also points out another challenge that of mistrust of ICTs by other senior government officials, fearing that ICTs can exposes them (Mambo, 2012).

The Government of Zimbabwe (2005:17) identified some of the main ICT challenges in Zimbabwe that negatively affect e-government development. These challenges include:

- inadequate communication infrastructure

- inadequate ICT skills
- limited institutional arrangements
- inadequate financial resources
- limited public-private partnerships
- limited data management capacity
- inadequate horizontal and vertical communication
- inadequate bandwidth both nationally and on the gateway

If the GoZ makes an effort to work on these challenges e-government implementation will become easy.

3.9 E-government at the Local Level

E-government at the local government level in Zimbabwe is still new and most of the local government entities are still caught up in the traditional way of manual operations. The Ministry of Local Government has appealed to local authorities to embrace e-government and has stated that e-government is "*no longer an optional programme".* Local authorities in Zimbabwe must be motivated by other local authorities in Africa that embrace e-government to improve service delivery (Mupingo, 2013). However, up to this stage nothing much has been done to this effect. HCC and Bulawayo City Council are the only local authorities that have managed to set up websites and these are still at the informational stage without much interaction with citizens. Since local authorities are the entities closer to people it is more advisable to focus on e-government implementation at this level.

3.10 Conclusion

This chapter summarised the manifestations of e-government in Zimbabwe. The country has adopted, and is keen on implementing, e-government projects as evidenced by the many policy documents that have been crafted in relation to e-government. However, even if there is evident interest in e-government, research has shown that implementation is slow and hampered by challenges, such as lack of

resources, lack of the required infrastructure and human skills, and lack of appreciation of ICTs by some senior people in government.

The government still has much to do to make Zimbabwe an e-ready society. The infrastructural environment must be improved, base stations and fibre optic cables must be extended to remote areas, regulatory and legislative framework relevant to e-government must be developed, and political leadership must show commitment through implementing e-government projects.

The existing web portal must also progress from posting mostly static information and become more interactional. There must be intense training of human capital in studies relevant to ICT development. All these changes will improve the e-readiness assessment of Zimbabwe.

The next chapter will look closely at the case study. An in-depth analysis of the HCC will be offered.

CHAPTER FOUR: E-GOVERNMENT IMPLEMENTATION IN HARARE CITY COUNCIL

4.1 Introduction

This chapter will look at Harare City Council (HCC), which is the case study for this research. An in-depth analysis of the historical, socio-economic and political status of this local authority will be carried out as it will affect how e-government is being implemented. Lastly, the HCC e-government application will be analysed in detail. Discussions in this chapter emanate from findings from a literature review of council documents, observation by the researcher, newspaper information, interviews with fifteen council employees and two interviews with external individuals. The key interviewees were chosen on the basis of their knowledge of e-government implementation and the others were interviewed only to ascertain how e-government is implemented.

4.2 Contextualising Harare City Council

HCC is a local government entity in Zimbabwe, delegated to foresee the administration of the capital city of Harare. Harare has a population of 1 485 231 people, excluding the satellite towns of Chitungwiza and Epworth, according to the 2012 census. This entire population falls under the jurisdiction of HCC (Government of Zimbabwe, 2013a: Preface). The establishment of this local authority can be traced back to as early as 1891 when a board of management was established to run the affairs of the city of Salisbury (Visser, Steytler & Machingauta, 2010:3).

Figure 4.1 Aerial Photograph of Harare City

Source: Harare City Website (2014)

The above aerial photograph shows the capital city of Harare that HCC has mandate over. Any local authority in Zimbabwe is mandated by section 276 of the Constitution of Zimbabwe to "*govern, on its own initiative, the local affairs of the people within the area for which it has been established, and has all the powers necessary for it to do so".* Local authorities are divided into urban and rural local authorities and Harare is an urban local authority. The Urban Councils Act is the legislation that guides the activities of urban councils. Their functions, powers, responsibilities, and sources of revenue are all elaborated in this legislation. The Ministry of Local Government, Public Works and National Housing is mandated to oversee the operations of local authorities.

Local authorities are the government entities that are closest to the people and they are responsible for providing basic services required by citizens (Visser, Steytler & Machingauta, 2010:15). Some of the functions that are elaborated on in the Urban Councils Act define the services that urban local authorities are supposed to offer to citizens. These include:

- "*water for domestic, commercial or industrial areas*
- *hospitals, clinics, ambulances, maternity and child welfare*

- *schools, libraries, theatres and musical and scientific institutions*
- *provision of housing and transport facilities*
- *construction and maintenance of drains, sewers, bridges, and parking*
- *cleansing and refuse removal disposal*
- *prevention of air, land and water pollution*
- *operation of fire brigades and municipal police*
- *street lighting*
- *public places*
- *provision of parks*
- *recreation grounds and open spaces*"

(Government of Zimbabwe, 2014b)

The HCC is therefore mandated to offer these basic services to residents.

4.2.1 The administration of HCC

Both political and administrative officials oversee the affairs of HCC. The mayor is the political head and, together with councillors, the political leadership for HCC is formed. The town clerk and all his subordinate officials oversee the administrative side. There are a total of nine departments for HCC. There are also district offices and sub-offices that are located within the reach of residents where they access basic services and pay their bills. The headquarters of HCC is located in the central city of Harare.

4.2.2 The state of service delivery in HCC

The quality of service delivery of a government entity can be best measured by the perceptions of the citizens, as they are the consumers and therefore the best judges. HCC has received constant complaints from the residents over its lack of service delivery – a problem that has become obvious. The city of Harare, known as the Sunshine City, is now "*bedevilled by critical failure in service delivery as evidenced by water shortages, inefficient refuse collection and meandering streams of sewage in some suburbs"* (Crisis Coalition of Zimbabwe, 2013:1). Service delivery must be addressed if there is ever going to be a change in the current situation. Citizens in

Harare do not have effective channels of expressing their inputs on how the city is governed and, even when asked, their feedback is never incorporated in decision-making, especially with regard to budget preparations (Zinyama, 2012:75).

Cases of rampant corruption have also surfaced in HCC. Findings on the state of service delivery presented to parliament in 2010 revealed that some people on the housing list would bribe officials to be moved upwards on the list. The procurement system is also carried out in a way that is prone to manipulation. (Government of Zimbabwe, 2010b:30).

Figure 4.2 Headquarters of Harare City Council

Source: Harare City Website (2014)

The building depicted above is the headquarters of HCC. It is the building that houses the mayor of Harare and most of the city's departments are also housed here.

4.3 State of Information and Communication Technology in Harare

ICTs in Harare are in a developing state. Both state and private entities are making efforts to keep the city connected (ADB, 2012:12). There are a number of actors in the telecommunications sector that operate in Harare. Net One is the parastatal that has monopoly over fixed lines. Econet, Telecel and Net One are the major actors in

the mobile telephony sector (ADB, 2012:4-5). All these mobile operators are 100% digitalised and they offer 2G, GPRS, EDGE and 3G services (Baxton, 2011:7).

There are also a number of internet service providers that offer internet services. Zinyama (2012) carried out research on e-governance in Harare, arguing that e-governance is the missing link in citizen participation in HCC. The research results of the survey Zinyama (2012) carried out are shown in Table 4.1.

Table 4.1 Household Access to ICTs in Harare

ICT Access	Yes	N o
Cellphone	99.9%	0.01%
Internet Facility	17%	83%
Landline	38%	62%
Radio	72%	28%
Television	96%	4%

Source: Zinyama (2012:82)

The survey shows that many individuals in Harare have access to mobile phones. It also reveals that a growing percentage can access the internet, either though their mobile phones or PCs.

4.4 The State of ICTs in HCC

The ICTs of HCC are in a developing state, as is normal with all technological systems. One will never reach a point of having achieved it all but there must be constant and continual development. This section assesses HCC's access to computer hardware and internet facilities, along with its ICT systems and emphasises to what extent HCC systems are integrated. Information in this section was mainly derived from interviews.

4.4.1 Access to computers and internet services by the city staff

The ICT manager revealed that HCC staff has limited access to the internet, and out of the 102 offices that HCC services, only six offices have limited and heavily monitored access to the internet. Most of the activities in district councils are carried out manually or are captured on computers that are offline. This information includes billing data, the housing waiting list, and health services information, amongst others. That information cannot be sent directly to the head office, as district offices are not networked. It has to be captured on hard drives and memory sticks and someone has to travel with the information to the head office where the information will be entered into the system. This state of affairs negatively impacts on the quality of information that HCC deals with, it is time consuming and there is a higher risk of data loss. The staff from district institutions corroborated this information.

4.4.2 Access to computer hardware

Access to computer hardware and fax machines is also severely limited. The researcher gathered from interviews with district offices that, on average, there are about two computers at most district offices and these are mainly for billing purposes. Most of the computers are old, constantly break, and take time to be fixed. In interviews, four out of six of the staff at district offices, libraries and clinics indicated that the limited number of computers was negatively affecting their work. Mabelreign district offices received a donation of three desktop computers and a printer from Exodus & Company (Pvt) Ltd in June 2014. This happened after the real estate company realised that all their correspondences from the district office were handwritten (Harare News, 2014). This situation is not limited to this district office alone but affects all district offices and entities. All still resort to manual recording of information.

4.4.3 Wide area network project

HCC embarked on a project to establish a wide area network (WAN). A wide area network is defined as a broad area network that links across metropolitan, regional, national or international boundaries using leased telecommunication lines (Wikipedia, 2014b). A WAN allows an organisation to run effectively regardless of

the distance barriers that may exist. However, as gathered from the interviews with the ICT manager and key informants in HCC, this project is only about 6-7% developed. This is the reason why access to the internet is limited to the networked offices only.

4.4.4 Geographical information system

HCC has also managed to begin implementing a geographical information system (GIS). This system is meant to capture, analyse and present data with reference to its geographic location. Many local authorities have adopted the use of GIS and it can be used for different purposes, like identifying council-owned land or planning for emergency response, but Madzokere (2014) indicated that this system in HCC is mainly for billing purposes because currently they are unaware of the number of the clients they are servicing. Humi Pipes, a private sector organisation, is the donor of the GIS project in HCC and they also donated eight laptops so that the project can run smoothly. (Herald, 5 December 2012).

4.4.5 Enterprise resource planning system

The researcher gathered from the interviews with ICT employees that HCC has also adopted an enterprise resource planning (ERP) system. They are using business intelligence quotient (BIQ) modules for this system developed by Quill Associates, a company based in South Africa. The BIQ modules system is specifically designed for local authorities and the system is:

- interactive
- implemented on a relational database
- internet ready

(Quill Associates BIQ website, 2014).

The ICT manager and the systems support officer stated in the interviews that the ERP of HCC has twenty-five BIQ modules that are intended to integrate the systems of HCC. Currently there are very few BIQ programmes that are fully running, like the traffic management systems, and others are not fully functional. The other BIQ

module that is complete and about to be operational is the one allowing ratepayers to view their account balances online. Some of these BIQ modules will be able to offer e-services to residents when fully functional.

HCC adopted their ERP system in 2006 and it was introduced in a crisis mode since the system they were using at that time had crashed. However, the project was negatively affected by the economic crisis in Zimbabwe from 2007 to 2009. It is only now that the project has started to gain attention again. The HCC cannot yet fully enjoy all the benefits of an integrated system because the project has not yet been finalised and extended to the district offices.

4.5 E-government in HCC

E-government is very new to HCC; they only became actively engaged in e-government in 2012 after the adoption of the IRBM system (City of Harare, 2012:09). However, prior to that there has been e-government awareness, especially in the ICT department that saw the department corresponding with the town clerk to reinforce the need to implement e-government in HCC. The then ICT manager, Chawota (2013), showed the researcher one of the letters the department had written to the town clerk in 2011, which explained the motivation behind the introduction of e-government in HCC. Chawota also attended the Conferences on World E-government Cities and was motivated to start implementation in HCC.

E-government (as elaborated by one of the correspondences from the ICT department to the Town Clerk's office, shown to the researcher by the ICT manager) is defined by HCC as electronic-driven government; it is the use of ICTs for delivering council services.

Factors identified as essential for e-government implementation during the interviews include connectivity, cost to residents, provision of information centres, public and private partnerships, having a common database and linking of households to the council, and the council to the central government. HCC believes e-government has the potential to improve its service delivery and information distribution.

Of the ten employees asked in interviews about the relevance of e-government, eight believed that the implementation of e-government would improve service delivery. The benefits of e-government for HCC, as cited in interviews with key informants, include constant communication with residents, readily available information, easier town planning, challenges relating to welfare and the economy being addressed, and the creation of safety and eco-friendly zones.

4.5.1 Web presence

The first and crucial step in front office e-government was the development of an official website for HCC in June 2012 and, though this website has not been officially launched, it is fully functional. The creation of a website allows the offering of basic services to residents through the internet. HCC believes that the website will allow them to offer e-government services through the developed BIQ modules.

The website contains basic information, including about the various departments, contact information of officials, and news of HCC. There are few downloadable items on the website, which include the council's strategic documents, speeches and budgets. The HCC website can be accessed using mobile phones but it is very slow and some links fail to open. The website is currently updated but the most crucial question is of the content value to residents. Currently the website is updated by one individual (the systems support officer) but there are plans that content managers from all nine departments will be trained to update information from their departments (Dhedheya, 2013).

The researcher spent considerable time assessing the HCC website and made the following observations: the HCC website is linked to the HCC Facebook page. On this site they post much information that is usually copied from the website. Currently there is a programme being run by the Corporate Communications Department that is entitled 'Know your Councillor'. A new councillor is featured on that page every now and again, giving residents an insight into their councillors' lives and usually their contact details are added as well. HCC also has a twitter account.

The researcher also observed that the HCC website is mainly at an informational stage where it is used as a communication medium by the corporate

communications department. The development and maintenance of the website was recently moved from the department of ICT to Corporate Communications. The move, if not properly monitored, might see the website being used for communication purposes only and less effort being spent on offering some e-services to residents.

Some of the identified challenges in the website development were resource constraints and lack of participation from other departments. Departments were asked to draw up their departmental profiles in the initial stages so that the information will be posted online, but some did not submit their profiles even after being reminded several times (Dhedheya, 2013).

4.5.2 E-services

HCC also partnered with private sector mobile service providers who operate in mobile banking, and HCC ratepayers now have the privilege of paying their bills using their mobile phones without queuing for hours at the district councils or the head office. HCC also indicated that the BIQ module that allows residents to view their account balances is now complete and must be integrated with the website. This will give residents greater convenience, as they will be able to view their balances online and pay their accounts using their mobile phones. HCC has partnered with Econet and Telecel to provide this service (Madzokere, 2014).

To make a bill payment with Econet through EcoCash, these steps should be taken:

1. Dial *151*200# to access the EcoCash menu.
2. Enter your EcoCash pin.
3 Select the option 8 'pay bill' option.
4. Enter the biller code (26672).
5. Enter the amount.
6. Enter the account number.
7. Select option 1 to confirm the transaction.
8. Select the send option.

(HCC, 2014).

Telecel ratepayers *"simply dial *888#, menu, and select the 'pay bill' option and choose City of Harare among the list of service providers to be paid displayed on the screen. The subscriber then enters the account number on the City of Harare bill, the amount to be paid, then enters his or her personal identification number (PIN) and makes the payment. After making payments, a subscriber will receive a unique transaction ID that can be quoted, like a receipt number, in the event of any query*" (TechMoran Magazine, 2014).

4.6 Conclusion

This chapter looked HCC in its contextual setting and noted that HCC is a local government entity that is struggling in its public service delivery. Its processes and operations are hampered by inefficiencies and ineffectiveness, and its ICT system needs special attention if any meaningful e-government implementation is to take place. There is a great need for integration of the ICT system as this is important for e-government implementation. Its front office e-government is still at the initial stage of a website that offers basic information. It has also managed to introduce mobile payments of bills. The main findings of HCC e-government implementation will be looked at in the next chapter.

CHAPTER FIVE: RESEARCH FINDINGS AND ANALYSIS

5.1 Introduction

This chapter summarises the findings from the literature review and interviews, and analyses and assesses how HCC is implementing e-government. The findings will be analysed using ten factors identified in e-government literature that affect successful implementation of e-government, and that are relevant to our case study. These factors have been identified in chapter two of this study.

The researcher identified factors that are likely to be essential for initial e-government implementation as this is the stage where HCC is. These factors are considered essential, as some will be relevant at later stages of e-government development, such as essential security features for when e-government enters the transaction stage. The factors to be analysed are: the existence of an e-government vision; availability of sound ICT infrastructure; availability of a sound budget; existence of committed leadership; access to ICTs; availability of human capacity; private and public partnerships, and creating awareness; availability of a monitoring and evaluation framework; and a conducive regulatory and legal framework.

5.2 E-government Strategic Vision

The availability of a vision in any project gives participants direction and the motivation to fulfil what the vision entails. The vision must be communicated to all concerned parties and even its conceptualisation must include all relevant stakeholders. Successful e-government implementation also requires crafting of a detailed vision laying out objectives and strategies beforehand. Any organisation or country implementing e-government must "*define its own vision for e-government stating what e-government means to them and what they are aiming to achieve by adopting e-government*"(UNESCO, 2005:25).

HCC has managed to develop an e-government strategy that is entailed in the organisation's ICT strategy. However, the researcher was not given the privilege to view the document as it was regarded as classified information. Instead, she was told some of the information it contains. The e-government strategy is part of the ICT

strategic policy for the organisation and has been integrated with the city's mission of being a world-class city by 2025.

Responses from the interviews on HCC's e-government strategy revealed that, although HCC has an e-government strategy, there was a lack of mobilisation and participation in its conceptualisation that has not been effectively communicated to all concerned parties. Most senior managers seemed ignorant of what e-government entails and civil society organisations that deal with HCC on a regular basis were not involved in its conceptualisation. One senior official in a strategic department responded to the question on how they define e-government, saying "*what animal is e-government"* and other responses were "*we heard that it's coming*". They view it as something foreign.

The researcher deduced from the interviews that the only department that seems to understand e-government and is aware of the vision and the plans of the city is the ICT department. Out of the six ICT employees interviewed, all were aware of what e-government is and the e-government plans for HCC. This is because they are directly involved in its implementation and some members had the privilege to attend training sessions organised by the president's office on IRBM, which also centred on e-government. However, interviews carried out with other departments revealed that the e-government agenda has not been properly communicated. The three senior managers who were interviewed only seemed to have a vague understanding of the term e-government and one did not even know what e-government was about.

Aligning their e-government vision with the organisation's overall vision is a positive step that HCC has taken. Culbertson (2004:62) states that, "*e-government is an enabler, not an end in itself. It can make important contribution to broader policy and service delivery goals".* E-government must be integrated into broader public sector objectives. Harare wishes to attain the status of a world-class city by 2025 and they believe that ICTs have greater potential to assist in achieving that goal. They identified "*ICT transformation as a change management tool"* (City of Harare, 2012:2).

5.3 ICT Infrastructure

Another important dimension of e-government that will certainly affect implementation is ICT infrastructure. ICT infrastructure refers to the physical hardware and all else that allows the flow and processing of information. This includes satellites, base stations, computer hardware, fibre optic, and also software and operating systems. Sound ICT infrastructure has the potential to make e-government projects excel but its absence will hinder e-development. "*The effectiveness of e-government services in reaching citizens and business depends greatly on the availability of ICT infrastructure"* (ITU, 2009:6). Successful local e-government projects have seen local authorities establish their own telecommunication networks and make efforts to build sound ICT infrastructure.

HCC's ICT infrastructure requires redressing if any meaningful e-government implementation is to be carried out. Interviews with the ICT manager and other ICT staff revealed that the WAN project is developed at only around 6-7%, and their ERP system is not yet fully developed, meaning that there is no integration in their systems. Internet access is very limited and access to computer hardware is scarce. Most of the district offices only own computers for billing purposes; libraries and clinics usually have one or two computers that break down often and at times it takes weeks to get them fixed. The City Health Services Department lamented this state as they indicated that health information in districts and hospitals was predominately paper-based and this negates the timeliness and accuracy of information (City of Harare, 2010:52).

In the HCC 2013 budget, one of the aims was to computerise HCC but the year came to an end without this goal being achieved. Some case studies of local e-government projects analysed in the literature section reveal that, prior to any meaningful provision of e-services, serious effort must be dedicated to building a sound ICT infrastructure. HCC must likewise put more effort into building a sound ICT infrastructure.

"*The infrastructure dimension also extends to the energy sector, as access to electricity is a precondition for a functioning ICT infrastructure*" (ITU, 2009:6). Harare has an erratic power supply. This dates back to around 2007 when loadshedding was introduced. It deteriorated to the point of power cuts for up to twenty hours per

day. The country requires 2 200 megawatts (MW) but is only producing about 1 300MW and has a deficiency of about 900 000MW (Mtomba, 2013). Figure 5.1 shows a forecast of electricity supply in Zimbabwe up to 2030 and shows that, if nothing is done to remedy the situation, demand will continue to rise while supply will be constant. The researcher witnessed the effects of erratic electricity supply during fieldwork. Almost every day electricity would be cut for about three to four hours and be on again at night. This hampers e-government projects, and policies must be put in place to ensure the constant supply of electricity.

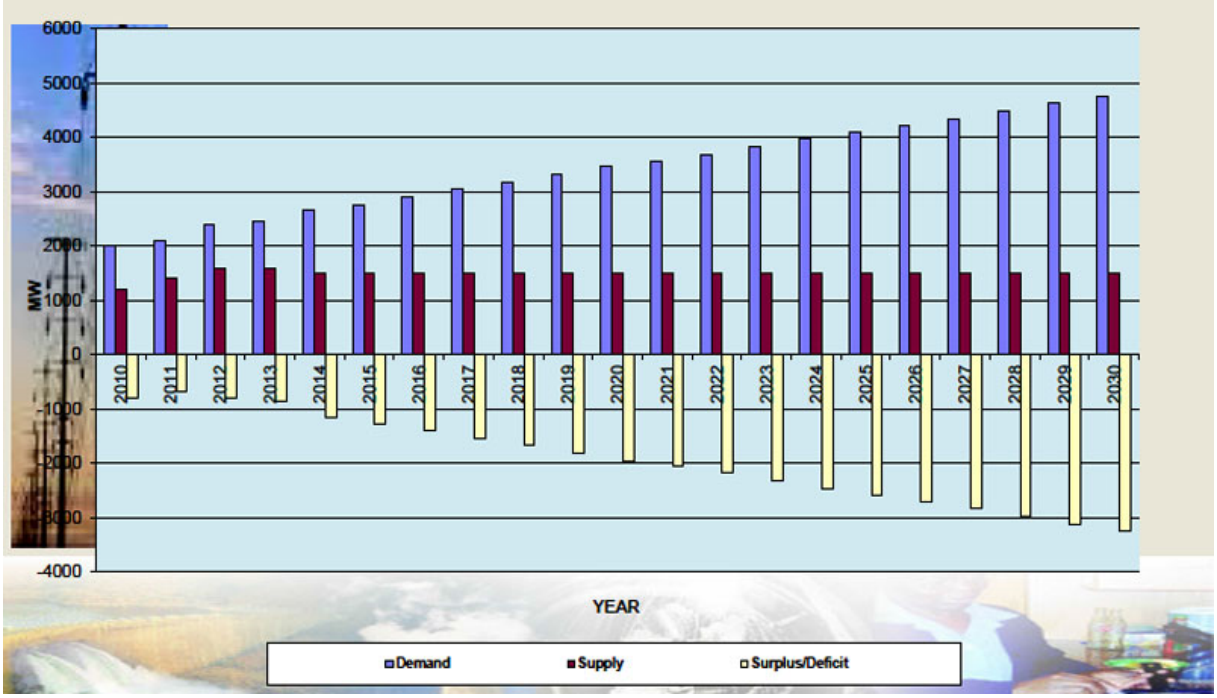


Figure 5.1 Zimbabwe 2010-30 Supply Surplus/Deficit Bar Graph

Source: Zimbabwe Electricity Supply Authority (ZESA) Website (2014)

5.4 Leadership and Commitment

E-government projects need leadership that will ensure commitment to projects. There must be someone or an agency that will champion its causes. Both political and administrative leadership are essential. "*Many e-government advances to date have been driven by the enthusiasm of individuals and individual agencies"* (OECD, 2003:93). At the national level, forming an inter-ministerial group that will champion e-government creates leadership. Leadership is there to motivate and direct e-government projects.

HCC lacks real commitment and leadership in e-government. Senior managers' responses reveal that there is commitment from the top to implement e-government but junior staff felt otherwise. HCC has managed to identify the potential of ICTs and in their strategic vision ICT transformation has been identified as change management tools. However, it is lack of action that makes junior staff believe otherwise. They believe that ICTs are not appreciated in the organisation and they do not receive priority most of the time.

There is neither a department nor any individual within the organisation solely responsible for e-government development; it falls under the ICT department. This in itself shows that there is no commitment to ensure e-government development. In the city of Seoul, labelled as the number one digital city, an e-government promotion group is set up that is headed by the chief information officer (Seoul Metropolitan Government 2013:10).

5.5 Sound Financial Budget

E-government projects are usually expensive and are very often regarded as a lesser priority than other pressing issues. However, if there is ever to be meaningful implementation that produces results, e-government projects need sound financial commitment. Culbertson (2004:61) notes that one of the main challenges of e-government projects is a "*lack of budget commitment to enable effective e-government".* This is more so in developing nations that have resource constraints. If only the leadership of such nations would realise that implementing e-government properly will actually cut costs.

HCC also fails in that it fails to commit financially to e-government projects. In the HCC 2013 budget one of the aims was to computerise the organisation but the year came to an end without this goal being achieved. Many of the organisation's operations are still manual. In the HCC 2014 budget, one of the aims was to implement WAN and local area network (LAN) and a budget of $2 500 million has been set aside for this project. However, 2014 came to an end and no meaningful work had been done on the project. The project still remains at about 6-7% complete and most of the work was implemented in previous years. HCC will not realise its e-

government objectives if it is not willing to commit financially, and to see that funds allocated to projects are not diverted and projects are done in time.

5.6 Access to Information and Communication Technology by Citizens

One of the important aspects in e-government implementation is the issue of access to ICTs by citizens. It is possible for governments to build sound e-government systems but citizens might fail to benefit from these services if there are factors that hamper their access to ICTs. Van Den Berg, et al. (2006) believe that "*Access to ICT has several dimensions. It includes not only the ownership of hardware devices but also the capabilities to use information technologies, and access to the internet".* This therefore shows that access to ICTs has three dimensions:

1. Ownership of hardware, which may be mobile phones or computers.
2. Access to the internet and this may be hampered by high internet prices or lack of infrastructure that will hinder connectivity.
3. Capacity to use ICTs (this ability might be hampered by low literacy skills or mental attitudes).

Lack of access to ICTs will create a digital divide. Digital divide is one of the biggest challenges facing developing countries in their e-government implementation. Africa has been said to "*remain at the tail end of the digital divide*" (UN, 2012:15). Successful e-government implementation ensures that the digital divide is bridged. Efforts to ensure access includes provision of internet access and Wi-Fi access at public places, like information centres, libraries and parks.

HCC has not made any efforts to ensure that Harare residents will be able to access the information and services offered on its website. The response on what the organisation was doing to ensure access to ICTs by residents was that there are telecommunications companies in Harare who are able to offer those services. The question that remains is about the accessibility of the services which, when dependent on the private sector, may only be affordable to a few residents.

Table 5.1 Comparison of Data Tariffs in Zimbabwe

Service Provider	Price Per Two Gigabytes of Data
Netone	$50
Econet	$50
Telecel	$45

Source: Kabweza (2013)

Table 5.1 shows data tariffs in Zimbabwe. An average of $50 per 2 gigabytes of data is too much for the average Zimbabwean. It is noted that about 77 percent of employed persons in Zimbabwe earn a gross monthly primary income of US$350 and below (Government of Zimbabwe, 2013c:79). This means that only a few individuals can afford to access e-government services. It has been noted that, "*many advantages of online government information and services are not replicable offline*" (OECD, 2003:153). If the advantages cannot be replicated offline this poses a disadvantage to those without access.

Hence, there is a need to promote policies and strategies that will ensure no one is left out. In a survey carried out in 2012, Harare had 17% access to internet facilities (Zinyama, 2012:82) but the figures have escalated recently due to the influx of mobile phones that connect to the internet. However, most of those phones have limited capacity and cannot open many pages. This then means limited access to the HCC website.

5.7 Private Partnerships

Another important factor for successful e-government implementation is partnering with the private sector. "*A healthy collaboration and partnership between the government and the industry/private sector entities shall lead to easy fulfilment of e-government goals"* (UNESCO, 2005:15). This is because the private sector can bring in expertise that is specialised or other resources. "*Whether a country is developed or in the developing stage, successful e-government requires the expertise, resources and input from the private sector"* (UNESCO, 2005:30).

During the interviews the researcher gathered that HCC values partnership with the private sector. This point was identified by all four of the six respondents interviewed on the question of identifying factors for successful e-government implementation. HCC has managed to partner with the private sector in software development. Quill Associates, a company based in South Africa developed the BIQ modules that the HCC uses in its ERP system. HCC has also partnered with mobile service providers Econet and Telecel to give the citizens the service of mobile payments of bills. Management indicated that they would continue to look for ways to partner with the private sector in the future.

5.8 Creating Awareness

Another important factor in e-government implementation is creating e-government awareness both within the organisation and with the citizens. "*What good can a well-defined vision do if its awareness in the minds of the intended beneficiaries as well as its stakeholders is low?"* (UNESCO, 2005:26). Therefore it is necessary that the vision be clear and communicated to all relevant stakeholders. Lack of awareness will limit participation. "*Build a web site and expect users will use it is an approach that has failed many early government efforts into e-government*." (ITU, 2008:5). Therefore it is imperative that platforms be created whereby citizens will be informed about e-government vision and services. This communication and awareness is also important to the employees within the government organisation. "*The e-awareness amongst the government employees and their willingness to embrace change shall play a key role in the whole process"* (UNESCO, 2005:15).

The researcher noted from the interviews that e-awareness was very low in HCC, both amongst residents and employees. The HCC website has not been formally launched even though it came alive in 2012. The launching dates keep being postponed so there has never been a formal platform whereby the residents were made aware of the existence of the HCC website. E-government awareness is also very low among the HCC employees. Except for employees in the ICT department and some senior managers, the term e-government is new to most employees. If HCC is to realise successful implementation, they must devise ways to ensure that their e-government strategy is communicated properly to all relevant stakeholders.

There is a tendency in some organisations to not communicate visions and goals properly so that even when the projects fail, no one is held liable.

5.9 Human Capacity

Human capacity is essential in e-government implementation. This capacity relates to ICT skilled people in e-government projects. This dimension also extends to capacity of citizens to use digital resources and also to the ICT skills of government workers. One of the challenges affecting developing nations is "*An inadequate human resource base trained to handle e-government projects"* (Maiga & Nabafu, 2012:4).

HCC has ICT skilled people; there are employees with different expertise in ICT in areas like network administration, IT governance, systems administration, database administration, and programming, among others. However, the capacity is insufficient for complex projects. The researcher noted that some of the employees in the ICT department were employed hastily, even when some were still on industrial attachments, because of the vacuum created by brain drain. This shows that HCC has lost some talented workforce in ICT. HCC identified their depleted workforce as one of the challenges they are currently facing (City of Harare, 2012:1). HCC must also ensure that there are individuals who have e-government knowledge. These individuals are not necessarily ICT experts but people who have been exposed to e-government knowledge or projects. HCC has fairly few people who have in-depth e-government knowledge.

5.10 Monitoring and Evaluation

Monitoring and evaluation is another factor that is important in e-government implementation. This will assist the implementers to understand if they are doing things properly and to assess the impact of their projects. "*A framework for assessment must be prepared prior to initiation"* (OECD, 2003:136).

HCC has not managed to develop a monitoring and evaluation framework. ICT management reveals that the business development unit, which is a separate entity

of HCC, is responsible for the monitoring and evaluating projects of every department in HCC (Chawota, 2013). This unit is said to have done a great job in monitoring the waste removal process, which had deteriorated terribly, and ICT management has faith that they can do great work for e-government projects as well. However, in as much as the Monitoring and Evaluation Unit at HCC has experts in the field, it was essential for the ICT department to have developed a monitoring and evaluation framework right from the onset. This would assist this unit in assessing the progress and impact of e-government in HCC.

5.11 Regulatory and Legal Framework

Another crucial aspect that must be considered in e-government implementation is the regulatory and legal framework. Misuraca (2007:64) believes that "*a proper regulatory framework is needed in order to enable secure information exchanges".* This is important in e-government implementation and disregard for this aspect might affect the pace of e-government development. "*The formulation and enactment of well-crafted IT laws and policies is a prerequisite for the success of an e-government adventure"* (UNESCO, 2005:15).

ICT policies enacted at the national level affect the e-government development of all other organisations in the country. Though there is a need for individual organisations to enact their own ICT policies that enhance security, the national policies and regulatory framework have a greater impact. As seen in chapter three, the legal and regulatory framework for ICTs in Zimbabwe is not well developed. Policies that promote cyber security have not yet fully developed and this will make people unsecure in their online activities. This has a negative impact on HCC e-government development.

5.12 Conclusion

In analysing HCC's approach to e-government, one can come to the conclusion that the council is not implementing e-government properly. The environment in which e-government is being implemented is not conducive and e-government is not receiving any priority. The e-government strategy is not well communicated to

concerned parties and the ICT system is not well integrated to support e-government initiatives. In addition, the level of commitment from leadership is questionable because to date there is no e-government department, access to ICTs by the citizens is also limited and the regulatory and legal framework is not well developed to sustain e-government development. The implementation process is flawed and it is difficult to foresee Harare's e-government attaining the status of being world class by 2025 if they continue on the same path. The next chapter will focus on conclusions drawn from this research and also offer practical recommendations to HCC regarding its e-government implementation process.

CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter offers a summary of the main findings of in this study, with conclusions being drawn from what was discussed in every chapter. Finally, recommendations are proffered for HCC in its e-government implementation. The researcher believes that, if these recommendations are incorporated, HCC will manage to implement a successful e-government system with positive results.

6.2 Summary of Main Findings per Chapter

This section summarises the main findings in all the chapters.

6.2.1 Chapter one

Chapter one provided the background to this study and also stated clearly the research aim and objectives. The research aim is to evaluate if e-government is being implemented in a proper way in HCC. The objectives of the study are to gain a broader international perspective on e-government, to gain a broader understanding of e-government in Zimbabwe, to assess e-government implementation in HCC, and also to identify the challenges they may be facing. The research design and data collection methods used during this study are also elaborated on in this chapter.

6.2.2 Chapter two

Chapter two dealt with the theoretical underpinnings of the study. The advent of ICTs has brought a positive transformation to the world. Alvin Toffler describes the Information Age as the third wave after the first and second waves of the agricultural and industrial revolution (Wikipedia, 2014c). This shows how transformational ICTs are, and public sector organisations have not been left out in this ICT revolution.

E-government has thus gained momentum from the twentieth century and promises to continue transforming public sector organisations. The accompanying benefits make its implementation a compelling necessity for governments. It can streamline

processes, make governments more efficient, add value to good governance goals, improve public service delivery and thus simply make for *"better government"* (OECD, 2003:10). E-government has also proved to promote the values of NPM and good governance. However, literature has shown that, for the benefits to materialise, there are factors that are essential during the implementation process. There are also challenges that must be dealt with in e-government implementation; these challenges include inadequate ICT infrastructure, lack of skilled expertise, inadequate private public partnerships, and resistance by senior managers to adopt e-government.

E-government at the local government level has not received much attention and much e-government literature is on the national level. However, it is very crucial for local governments to develop e-government systems because they are the government entities closer to the people. Literature has revealed that there are some local government entities that have succeeded in building sound e-government systems. The city of Seoul and the city of Fez are particular examples of such entities. The city of Fez defied the odds as initially it was facing almost all the challenges likely to be faced by developing nations. However, they worked through those challenges and were able to offer vital services to citizens.

6.2.3 Chapter three

This chapter analysed e-government in Zimbabwe. Zimbabwe has started implementing e-government at central level; it has managed to craft an e-government strategic document that gives the country direction in its implementation process. The Office of the President has been active in e-government policy development but the implementation process is slow and hampered by challenges, such as a lack of resources and failure to develop appropriate policies and regulations that support e-government development.

6.2.4 Chapter four

Chapter four introduces the setting in which HCC is set. It gives a detailed analysis of the historical and socio-environment of the municipality. The state of ICTs within

both the municipality and the city of Harare is also assessed. HCC's ICT system is not yet fully developed and integrated. Projects to integrate the system are taking long to complete. There is still widespread manual recording of information, and access to ICTs by the city staff is limited. HCC is still at an initial stage of e-government. The website is at an informational stage without interaction with residents.

6.2.5 Chapter five

Chapter five dealt with the main findings of the study. The research question was about assessing whether HCC is implementing e-government in a proper way. The following findings and analysis were made in regards to HCC e-government implementation: its implementation process has fallen short of what is expected; it shows lack of commitment in terms of its e-government strategy; the vision is not fully developed as it is part of the ICT strategy; and the vision has also not been communicated clearly to employees and residents.

HCC has also failed to build a sound ICT infrastructure necessary for sound e-government development. Back office needs much attention in e-government development. In HCC, the systems are not yet fully integrated. An ERP system has been introduced but it is not yet fully developed and so they are unable to access the benefits. The implementation pace is so slow; the project started in 2006 but has not yet been completed. Access to the internet within the organisation is also very crucial but HCC only has six offices out of 102 with access to the internet.

There is also limited internet access for the citizens in Harare. There are developed telecommunication networks in the private sector that offer high-speed internet access but, taking into account the economic status of the nation, many citizens cannot afford the expense.

HCC also lacks budget commitment to e-government projects. The council is struggling financially and investment in ICT projects in such times seems like luxury.

HCC has failed to build viable leadership for e-government. There is no e-government focal person in HCC and there is no department directly involved with e-government. The department of ICT in HCC is overwhelmed, especially due to

limited budgets. In such a situation, it is possible for e-government projects to receive less priority.

After reviewing facts drawn from the interviews and literature study, one can deduce that HCC must work on its implementation process – serious thought and effort must go into e-government to make it a practical reality. Some recommendations are offered and the researcher believes that, if these are taken into consideration, HCC's e-government story will be a different one within the next few years. These recommendations include development of an e-government strategic document, creation of awareness about e-government implementation, investing in ICTs and m-government, and development of good leadership and project management skills.

6.3 Concluding Recommendations for Implementation

The e-government implementation of HCC is flawed and falls short of positive results, so recommendations are offered to help smooth the implementation process in the hope that it will deliver the intended outcomes. HCC desires to be an e-city by 2025 with a mature e-governance system. HCC must consider the following recommendations taken from the best practices in e-government literature to achieve this goal.

6.3.1 Develop an e-government strategic document

HCC has an e-government strategy but this is encompassed within their ICT strategy. For the initial stages of e-government implementation this might suffice but there is a need for a standalone e-government document. At the central level in Zimbabwe, e-government vision was defined at the initial stages in the ICT policy but they also managed to create a strategic e-government document: Zimconnect E-government Implementation Strategy.

This document must be a product of negotiation with all relevant stakeholders, which includes the business, residents, non-governmental organisations (NGOs), and academics. Developing a strategic document within the ICT department of HCC will hamper buy-in from other relevant stakeholders, so full participation from everyone concerned must be ensured.

6.3.2 Make the vision known

E-government vision for a capital city like Harare should not be elite knowledge. It must be well communicated to all relevant stakeholders. Strategies must be devised to make sure that the vision and the existence of e-government services is made known to residents. The vision must also be made clear to all employees. This will ensure buy-in from all parties.

6.3.3 Invest in ICT

HCC has identified ICT transformation as a change management tool in their strategic vision 2012-2025. However, ICT projects are pushed down in priority by pressing issues, such as provision of water and waste removal. Priority must therefore be given to ICT projects if any meaningful transformation is to be realised. Research has shown that ICTs can streamline operations and save costs. The money saved can then be used for other policy issues such as healthcare or education.

6.3.4 Seek funding

E-government projects are usually expensive and, in developing countries like Zimbabwe, their uptake is very slow. HCC is in the same position; if its front office e-government is to develop from the mere existence of a website, they can explore the alternative of seeking funding from other sources instead of waiting for budget allocation from the council's revenues or from allocations from central government. They could draw up an impressive strategic document as a proposal for funding from other sources. In one of the examples of successful e-government implementation in a local context of a developing nation, the city of Fez in Morocco received funding from IDRC (Kettani, 2010:7). There are other bodies like IDRC that are willing to assist in e-government projects of developing nations but, as with all donor organisations, commitment must first me shown, and trust gained.

6.3.5 Leadership

E-government projects need leadership – both political and administrative. Successful e-government projects usually have an e-government champion. When e-government was initiated in South Africa, the then minister of public service was interested in implementing e-government and South Africa was regarded as one of the African countries leading in e-government projects (Cloete, 2012:7).

At the national level in Zimbabwe, the Office of the President has a department that is concerned with policy matters of e-government. HCC must appoint leadership for e-government projects. They can form a department or appoint just one focal e-government person who will spearhead projects.

6.3.6 Invest in m-government

M-government has gained popularity and many governments are paying attention to developing their m-government strategies. The city of Seoul has moved from concentrating on e-government projects to m-government because they realise that most of their citizens are using mobile devices to access government services (Seoul Metropolitan Government, 2013:13).

In Harare, statistics have shown that about 99.9% of internet access is gained via mobile devices (Zinyama, 2012:82). It is therefore advisable for HCC to develop its m-government strategy. M-government can be as simple as sending notifications to citizens through their mobile phones instead of printing out account bills at the end of each month and having employees deliver them from house to house.

6.3.7 Develop good project management skills

HCC must also develop good project management skills with ICT projects. These skills include the ability to be able to design viable projects, communicating the plans to the relevant stakeholders before and during implementation, developing implementation strategies, monitoring the implementation process, and finally evaluating the outcomes and effects of projects. Successful projects start with in-depth effort at conceptualisation phase, but more importantly overseeing proper implementation and monitoring progress. The e-government implementation process

at HCC is suffering from a lack of good project management skills. HCC must develop a budget that will create project managers for ICT projects and that way projects will have leadership and not suffer.

6.3.8 Exchange programs

HCC managed to develop twining relationships with many cities. "*Harare City has active bilateral relations with three global cities, Nottingham (UK), Cincinnati (Ohio, United States), and Munich (Germany). Through the relationship with Munich – Harare is now into a tripartite arrangement with e-Thekwini (South Africa*)" (HCC, 2014). The city of Nottingham has developed an e-government system that is at a transactional stage. Their website is well developed and contains much necessary information for its residents. It is the same with the cities of Munich and Cincinnati. HCC must therefore arrange for exchange programs with these cities so that they can share ideas of how they managed to develop their e-government systems.

6.3.9 Bridge the digital divide

HCC must also make efforts to bridge their digital divide. The city of Seoul has managed to build access points (APs) in 285 different locations where they provide free Wi-Fi to citizens (Seoul Metropolitan Government, 2013:22). The city of Fez, also from a developing nation context, managed to build a Metropolitan area network system that interconnects all entities and they are now able to offer free internet access to the public in Fez's largest park (Kettani & El Mahdi, 2010:16). E-government projects will be embraced by citizens if the government is making efforts to ensure access to services. HCC may start by providing for free internet access at their district centers and libraries, and residents will be able to use the internet to access the council activities. However, investment must be made in computer hardware and also in completing the WAN project to ensure internet access to the districts in order to make this possible.

6.4 Limitations of the Study

The main limitation that the researcher encountered was a lack of e-government information in Zimbabwe. There is very little written text on e-government and there are also few individuals who are knowledgeable about e-government. The researcher also had to deal with the limitation of individuals who were unwilling to co-operate fully during the interviews. It seems as if many individuals in HCC are afraid to say anything that will discredit their organisation, and this seems to emanate from fear of victimisation. Respondents would avoid some questions and this unavoidably led to incomplete data on some issues.

ANNEXURE 1: EXPANDED INTERVIEW FRAMEWORK

An expanded interview framework is presented with a brief summary of the main responses. Q refers to the question posed by the researcher and A stand for the response, or answer, given by the interviewee(s).

ICT Manager (Retired): Mr. Chawota

Interview Guide:

Q: How does Harare City Council (HCC) define e-government?

A: E-government is electronic-driven government. At municipal level it is the use of ICT to deliver council services.

Q: What benefits do you think e-government can have on HCC?

A: Benefits cited included constant communication with residents, readily available information and town planning made easier.

Q: What motivated HCC to start implementing e-government?

A: Globalisation was the main factor because there is interaction with other local government entities that have embraced technology.

Q: Is there an e-government strategic framework that has been developed that will act as a guide in your e-government development?

A: Yes, there is an e-government framework developed that is part of the ICT strategy.

Q: Are all the relevant stakeholders involved in your e-government planning sessions?

A: There has not been much stakeholder consultation, planning was mainly carried out within the ICT department.

Q: Is your e-government progressing according to your expectations and plan? If not, what challenges are you experiencing?

A: We are still in line with our intended objectives but the main challenge we are experiencing is resource scarcity.

Q: At what developmental stage can we say HCC e-government is, and are you pleased with that stage?

A: HCC e-government is still at an initial stage of web presence and we are working hard to improve that and meet international standards. The vision is to have an e-city by 2025.

ICT Manager (Current): Mr. Madzokere

Interview Guide:

Q: What is the general status of ICTs in HCC?

A: HCC's ICT infrastructure is not fully developed, the ICT system is not yet fully integrated and there is a shortage of computers and internet access.

Q: What applications and systems have you introduced so far to support your vision of integrating ICTs as a change management tool?

A: HCC has introduced [the] ERP system which has twenty-five BIQ modules that will assist in integrating the HCC ICT systems and also offer e-services to residents.

Q: How integrated is your ICT system?

A: The HCC ICT system is not yet fully integrated but there are initiatives to make sure that there will be full integration. The WAN projects and the ERP system are two projects started aimed at meeting this need.

Q: How is the general appreciation of ICTs by senior management and is there support from the supporting Ministry and Central Government on ICT projects?

A: Senior management of HCC, especially the Town Clerk's office are fully supportive of ICT projects and the central government has also encouraged e-government adoption at the local level.

Systems Support Officer (responsible for website maintenance): Mr. Dhedheya

Interview Guide:

Q: To what extent are stakeholders (residents, staff and the business community) knowledgeable about the HCC website?

A: The website has not been officially launched yet so there has not been a platform to market the website.

Q: Is content selection on the HCC website based on consultation with the citizens?

A: Currently content selection is determined by the Department of Corporate Communications.

Q: Who updates the website and how often is the information updated?

A: The systems support officer currently updates the website, though there are plans to train nine content managers from different departments, who will update information from their departments.

Q: What e-services are being offered through your website and are there any e-services that you plan to offer in the near future?

A: Currently the HCC website is mainly for information provision though there are plans to offer e-services. Residents will be able to view their account balances online very soon.

Q: How do you measure citizen satisfaction with the information available on the website?

A: There are feedback channels on the website.

Q: What challenges are you currently facing in maintaining and developing the HCC website?

A: There are some departments that took long to avail information that we needed to have posted online.

Network Administrator, and Technician and Management Information Systems Officer

Interview Guide:

Q How is the general appreciation of ICTs in HCC?

A: All the three ICT employees believe that there is a generally low appreciation of ICTs by senior management, projects take long to be finalised because of resource constraints that are caused by low appreciation of ICTs.

Q: What can you say about the state of ICT in HCC?

A: the sentiment of all three respondents was that ICTs in HCC need attention, the current status is frustrating, and there is great need for ICT investment.

Q. Do you feel HCC was ready for e-government implementation and is the implementation process smooth?

A: All three respondents believed that e-government was introduced in time as there was need for transition. However, if there is to be a smooth implementation process great investment needs to be channelled into ICT infrastructure.

Senior management from three different departments

These were chosen to ascertain the infiltration of e-government in HCC. The Department of Housing and Community Services, Corporate Communications Department and Health Services Department were randomly selected.

Interview Guide:

Q: What do you understand by the term e-government?

A: Their understanding of e-government was limited, one respondent was clueless.

Q: What benefits do you think e-government will bring to your department?

A: A quick response time, easy dissemination of information and creation of safety zones.

Q: Do you feel that communication in HCC is integrated and it is easy to disseminate and share information within the organisation and with your stakeholders?

A: All the respondents lamented the challenge of information dissemination, especially at the district level. This challenge negatively affects their work.

District Administrators, Librarians, and Heads at Clinics (one from Mufakose and one from Dzivaresekwa District)

Interview Guide:

Q: Are you aware that HCC has a website?

A: All six employees were aware of the HCC website.

Q: Do you think that the website will enhance the delivery of public services and assist in the dissemination of information to citizens?

A: Three of the six employees believed that the website is a powerful tool for service delivery but the other three were sceptical, believing that very few residents will benefit from the website because of lack of internet access.

Q: Do you use any computers to capture information at this institution and how do you disseminate that information to the head office?

A: All respondents agreed that there were computers at their institutions but they were used mainly for billing services and capturing vital information only. All the computers in the district offices are not networked and information is captured on memory sticks and hard drives and then sent to the head office where it is captured on networked computers.

Q: Do you have access to the organisation's internet facilities?

A: There is no internet connection in all the district offices.

(a) One Civic leader from Harare Residents Trust and (b) one lecturer Mr. Mutero with interest in e-government

Interview Guide:

Q.: What do you understand by the term e-government?

A: (a) E-government is the use of ICTs in government.

(b) E-government is the use of ICTs but with particular interest in the internet in government.

Q. What benefits is e-government likely to bring to HCC?

A: (a) E-government will improve service delivery and reduce HCC expenditure if implemented successfully.

(b) E-government will simplify work processes in HCC administration.

Q: Where you at some point involved in, or asked for, some input in HCC e-government strategic plans?

A: Both were never involved in the HCC E-government strategic sessions.

Q: What advice would you give to HCC for its e-government implementation process so that it may yield positive results?

A: Both interviewees believed that HCC needs to computerise its organisation first and also create an integrated system.

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