ELECTRONIC GOVERNMENT: AN INVESTIGATION OF FACTORS FACILITATING AND IMPEDING THE DEVELOPMENT OF E-GOVERNMENT IN NIGERIA.

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ADEBAYO OLAJIDE FASHEYITAN

Supervisor: Prof. James Ogunleye

Director of Studies: Prof. Ezendu Ariwa

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DEDICATION

This work is dedicated to the Almighty God – JEHOVAH, and to the memories of my loving parents.

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ABSTRACT

This research work focused on investigating factors impeding and promoting E-government development in Lagos State of Nigeria through the lens of the government's e-Service initiates. Empirical evidence in this work suggest that E-government maturity in governmental Ministries in Lagos State are at mixed stages of development, ranging from 'emerging' to 'transactional' with reference to the United Nation's E-government benchmarks on frameworks used in assessing developmental stages of E-government.

Major factors found to impede E-government development in Lagos State Government Ministries are issues of inadequate E-government infrastructure and E-readiness issues, lack of technically skilled workforce, issues related to funding, inadequate political will to develop and support electronic forms of government initiatives, and resistance to organisational transformation and change. Major factors found to facilitate electronic government development in Lagos State Government Ministries are issues related to reduction in corrupt practises in public-sector organisations, encouragement of accountability and transparency in public-sector organisations, and reduction in overall cost of running public-sector organisations. The findings highlighted above can generalise across other regions in Nigeria and are consistent with literature on E-government development and implementation in emerging economies around the world.

The research work was conducted according to the mixed-method research tradition. Using an exploratory sequential research design that uses both the qualitative and quantitative strands of enquiry, the researcher was able to investigate various factors impacting E-government development in Lagos State which can generalise to other regions across Nigeria. The E-government research framework is underpinned by relevant E-government theories, frameworks, maturity models and interrelated concepts of Network and cross-agency collaboration processes. Research participants used in this work are drawn mainly from selected Ministries of the Lagos State government in Nigeria. The techniques for collecting the research data included document reviews, research visits and interviews, and the use of survey questionnaire.

Finally, the study revealed that Lagos State Government Ministries exist in silos, with non-existent cross-agency collaboration and Networking among governmental organisations.

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LIST OF ABBREVIATIONS

ANT	Actor-Network Theory
DEG	Digital Era Government
ECA	Economic Commission for Africa
e-Gov	Electronic Government
EGDI	E-government Development Index
e-GovQual	E-government Service Quality
GINs	Government Information Networks
GIII	Government Inter-Organisation Information Integration
G2B	Government-to-Business
G2C	Government-to-Citizen
G2E	Government-to-Employee
G2G	Government-to-Government
HCI	Human Capital Index
HEFAMAA	Health Facility Monitoring and Accreditation Agency
ICT	Information and Communication Technology
IF	Interoperability Framework
IoTs	Internet of Things
IS	Information System
IT	Information Technology
ITU	Information Telecommunication Union
KS	Knowledge Society
LASAMBUS	Lagos State Ambulance Service

LASG	Lagos State Government
MDAs	Ministries, Departments, and Agencies
MDG	Millennium Development Goal
NITDA	National Information Technology Development Agency
NeGIST	National E-government Strategies Limited
OECD	Organisation for Economic Cooperation and Development
OGD	Open Government Data
OSI	Online Service Index
PA	Public Administration
PCs	Personal Computers
PPP	Public-Private-Partnership
RFID	Radio Frequency Identification
SERVQUAL	Service Quality
SPSS	Statistical Package for the Social Sciences
TII	Telecommunication Infrastructure Index
TOE	Technology, Organisation and Environment
TSA	Treasury Single Account
UN	United Nations
UNDESA	United Nations Department of Economic and Social Affairs
UK	United Kingdom
USA	United State of America
WoG	Whole-of-Government

LIST OF PUBLICATIONS

Excerpts from this research work has been presented in form of the following publications:

Conference Papers

[C1] **Fasheyitan, A.O (2017).** Electronic government in Nigeria: An assessment of current developments, benefits, and challenges. *Paper presented at the Information and Communication Technologies in Organisations and Society (ICTO) 2017, International Conference held on March 16-17, 2017 at the University of Paris, Nanterre, France*.

[C2] **Fasheyitan, A.O (2017).** E-government Stakeholders: A study of Who Does What and Why in developing ICT-based Public Services. *Paper presented at London School of Commerce (LSC) PGR Conference held on September 13th, 2017 at the LSC Auditorium, London, UK.*

[C3] **Fasheyitan, A.O (2017).** E-GovQual: An assessment of E-government quality in Nigeria. *Paper presented at the 4th Big Data Analytics and Innovation Conference held on November 28-30, 2017 at Baze University, Abuja, Nigeria.*

CHAPTER 1

INTRODUCTION

1.0 RESEARCH BACKGROUND AND CONTEXT

E-government research output has continued to expand in volume and categories in recent years. The expansion of E-government cuts across multiple research domains particularly in the fields of Information System (IS) and Public-sector Administration (PA). Although Electronic government was initially thought of as an emerging concept in Information Communication Technologies (ICTs) as an avenue to enhance public-sector service delivery (Veljković *et al.,* 2014), it has metamorphosed into an instrument for delivering transformational public-sector services. The transformational values of E-government validate the claims of Lindgren and Jansson who posited that "E-government research is generally practise-oriented and is hence tightly coupled with E-government implementation practice" (2013, p.169). The above observation suggests a need for close alignment of electronic government theories with its practice which is essential for the identification of research needs and generation of useful research theories (Corley & Gioia, 2011).

Advances in Information and Communication Technology (ICT) no doubt have provided the impetus for the development and deployment of electronically driven applications commonly referred to as E-application platforms in the likes of what is seen today as E-commerce, E-learning, and more recently, E-government. The term E-government although not an entirely new phenomenon, began to gain greater prominence and recognition among pubic administration researchers in the late 1990's.

E-government is an expanding concept of governance and service delivery with capabilities to enhance public-sector services (Agangiba, 2013; Zhang *et al.,* 2014; Cordella & Tempini, 2015; Estevez & Janowski, 2013), and transform the nature of public administration (Janowski, 2015). The impact of globalisation, introduction of newer forms of information and communication technologies, the changing social and political environments; all interplay to redefine the role of governments and public-sector organisations as we see them today (Savic, 2006; Cordella & Iannacci, 2010). To provide

better service to their citizen, governments and the public-sector in general are looking for efficient and effective ways to meet the new challenges arising from the rapid advancement in the society. E-governance offers an opportunity to meet some of these new challenges successfully.

The United Nations observed that E-government and its associated technologies can potentially transform the relationship between peoples, businesses, and governments (U.N, 2008, 2012). It further explained that electronic government can serve different purposes such as improved government service delivery to citizens, better interaction with businesses and industries, citizen's empowerment through timely and efficient information access and use, and ultimately an avenue for an overall efficient government management (U.N, 2008, 2012, 2014). The benefits of adopting E-government by countries seeking good governance ranges from less corruption in the public-sector and increased transparency within government, to issues of revenue growth on the part of government, cost reduction in service delivery, and ultimately to providing greater convenience for the general public through convenient access to information and e-services (Bertot *et al*., 2010; U.N, 2012; Diga *et al*., 2013; Harrison & Sayogo, 2014).

E-government programme is suitable for adoption by any country intending a paradigm shift that replaces bureaucratic system of governance with one that has the citizens at the core of public services (Fountain, 2006; Bertot, Jaeger & Mcclure, 2008; Chen, 2010; U.N, 2012). It is important for public-sector organisations to find ways to collaborate and work together across organisational boundaries (Juell-Skielse et al., 2017) to develop consensual electronic forms of government that is acceptable and usable across all tiers of government. The process of government Departments working together in a "joined-up" manner will not only strengthen cross-agency collaboration but also improve the quality of service delivery (U.N., 2016). The joined-up approach to governance promotes adequate information access to the public at cost-effective, timely, and efficient manner (Gil-Garcia, 2012; Yang *et al.*, 2014) in a whole-of-government approach to service delivery.

There have been many studies and research conducted in E-government across the world. Though many of these E-government researches have focused mainly on developed and industrialised nations. E-government studies and research have concentrated mainly on technical factors and capacities of the host countries (Heeks, 2001a, 2002b; Schuppan, 2009; Fatile, 2012; Ashaye, 2014). Evidence from the literature has shown limited researches relating to E-government development in Nigeria and Sub Sahara Africa. For

African and other emerging nations to benefit from the potentials of E-government, more research needs to be done in digital government and the related field of E-government that focus on emerging African countries. Such research should be conducted to examine, test, modify, and adapt existing models to suit the context of the host country.

The United Nations has published ten Electronic government global development reports since 2001 up until 2019 and Nigeria's E-government development index has been significantly low over the years (Ifinedo, 2005; U.N, 2014; U.N, 2018) when compared to the E-government development index of other highly populated countries (U.N, 2018). The United Nation's electronic government survey conducted in 2014 scored Nigeria an online service delivery index of 0.3071 and a telecommunication index of 0.1905. The United Nations E-government Survey of 2016 scored Nigeria an EGDI of 0.3291(U.N, 2016), and the most recent UN E-government survey of 2018 scored Nigeria an EGDI of 0.3807. The lack of a meaningful increase in Nigeria's E-government development index over time indicated that if Nigeria is compared to its highly populated peers in Africa, it is one of the least developing nations in Africa regarding usage and application of E-governance (U.N, 2018). Despite the constantly low E-government development index recorded for Nigeria, there has not been any empirical study that investigated Nigeria's comparably poor usage and application of E-government.

Although researchers of electronic government in Nigeria have discussed technical issues such as inadequate power supply, low tele-density level, low broadband penetration, and lack of skilled technical workforce, non-technical issues such as Networking processes, Cross-agency collaboration, Organisational culture, and environmental issues have received lesser attention in the context of E-government frameworks in Nigeria. Evidence from literature has shown that lack of non-technical factors severely limited the usefulness of earlier E-government frameworks developed in Nigeria by E-government researchers.

This research work bridges the gap in both literature and practice of E-government in Nigeria by extending existing E-government frameworks available in Nigeria through empirical research of both technical and non-technical factors towards improving electronic government development and use in Nigeria.

1.1 RESEARCH AIM

To investigate factors facilitating and impeding the development of E-government in Lagos State of Nigeria focusing on the e-service initiatives of the State government Ministries and Departments. Part of the outcome of this research work is to produce a consensual E-government framework of best practise that could serve as a guide to the spread of E-government practice in other regions of Nigeria.

1.2 RESEARCH OBJECTIVES

1. To critically review relevant literature relating to E-government development focusing on conceptions and consensual models of E-government to gain new and in-depth empirical understanding of E-government issues and its state of development in Lagos State and across Nigeria.

2. To critically review and analyse E-government development stages of critical government Ministries, Departments and Agencies in Lagos State and across Nigeria with reference to the U.N. E-government benchmarks on frameworks, methods and metrics used in assessing the developmental stage of E-government.

3. To identify factors impeding the development of E-government in Nigeria with reference to the Lagos State government's e-Service initiatives through the lens of cross-agency collaboration and Networking processes.

4. To produce as an outcome of this research a Nigerian context-specific conceptual framework of E-government. The framework produced will serve as a guide to the spread of E-government across other regions in Nigeria.

1.3 RESEARCH QUESTIONS

The following research questions guide this research:

1. What are the major factors affecting the development of E-government in Lagos State of Nigeria?

2. Can inter-organisational 'Networking processes' strengthen the development of E-government in Lagos State of Nigeria and improve E-government adoption and use across all tiers of government in Nigeria?

3. Does inter-organisational collaboration exist between public institutions in Lagos State of Nigeria that could promote and encourage the adoption and use of E-government in Lagos State and across public institutions in Nigeria?

4. Can reformation of the existing public-sector organisations in Lagos State improve the development of E-government in Lagos State and replicable across other States in Nigeria?

1.4 JUSTIFICATION FOR THE RESEARCH

Although E-government practise is available in many countries in Africa, E-government practice in African nations remains mostly a western import based on western designs and experiences (Heeks, 2002a; Schuppan, 2009). It is notable that there are growing numbers of government ICT-led initiatives in many parts of Africa that are contributing to public-sector reforms and delivering expected outcomes (Heeks, 2002a; Jain & Akakandelwa, 2014). However, the overall objectives for E-government programmes should be placed alongside an open and inclusive form of governance; one which places the public at the centre of its functions (Reddick, 2005; Bertot & Jaeger, 2006; Verdegem & Verleye, 2009; Chen, 2010).

A primary reason why E-government is diffusing at a very slow pace in Africa is largely due to low e-readiness environment (Choudrie &Umeoji 2005; Abdalla 2012; Schuppan 2009; AbuAli & Almarabeh 2010). E-readiness in this context involves the ability of government to E-government support infrastructures that includes information processing systems like Internet-enabled technological devices, modern telecommunication systems, skilled workforce, legal frameworks to guide and protect E-government hard and soft structures, and stable power supply.

E-government researchers over the past two decades have continued to investigate with a view to understanding the contextual reasons why many E-government projects fail (Heeks & Bailur, 2007; Yildiz, 2007; Zhang, *et al.*, 2014). This research has continued to

generate interesting academic and practitioners' insights useful for the improvement of E-government development (United Nations, 2014). Contextual reasons for E-government project failures in Sub-Sahara Africa has been identified to include issues of the existence of considerable gaps between project designs and many African public-sector realities (Heeks, 2002). The E-government design-reality gaps prevalent in E-government project designs in many African nations have their roots in western developed countries (Heeks, 2003; Schuppan, 2009). Besides issues relating to design-reality gaps which is responsible for significant number of E-government failures in Africa, some E-government researchers have also mentioned issues relating to the economic cost of developing, implementing, and maintaining ICT-oriented projects in Africa and other emerging economies around the world due to the relative high cost of the infrastructures involved (Abdalla, 2012; Oni 2016). Other issues affecting E-government projects in Africa include unrealistic project designs set within an environment that is ill-prepared for such projects due and the lack of fundamental support infrastructures, human resources and skills necessary for the development and implement E-government that are not readily available in many of the developing countries (Heeks, 2003; Schuppan, 2009; Rorissa & Demissie, 2010). Corroborating the issues of poor E-government infrastructure in Africa, Azeez *et al.,* (2012) described E-government development and implementation challenges in Sub-Sahara Africa to include shortages of skilled ICT workforce, illiteracy, and low-level of electrical power supply. Ashaye and Irani (2013) described other factors militating against electronic government implementation in Africa as being numerous and ranging from economic constraints to socio-cultural and technical problems. Abdalla (2012) stated that successful implementation of E-government programmes in developing economies would depend mainly on favourable economic conditions, the influence of political powers, security and trust amongst other contextual factors that may be local to each of the countries in Africa. Nkohkwo and Islam (2013) are of the opinion that governments in Sub-Sahara Africa are corrupt and lack organisational vision needed to development and implementation successful electronic government projects. In support of the viewpoints of Nkohkwo and Islam on the challenges associated with economic corruption in Sub-Sahara Africa, Aladwani (2016) described economic corruption in developing countries as prevalent and lacking transparency. He argued that if corruption in government is not adequately checked, developing and implementing E-government will remain difficult. The challenges of economic corruption and non-transparency in government's activities has

been widely cited in literature to have adverse and limiting effect on the moral and governance capabilities of those in charge of the development of electronic forms of government in emerging nations around the world (Aladwani, 2016).

Apart from the problems relating to economic corruption resulting in E-government failures in Africa and other emerging nations, issues relating to electronic government adoption in Africa have also been considered by E-government researchers from the usability perspective, and found to be poor with very little uptake by the citizens of Sub-Sahara Africa (Verkijika & De Wet, 2018). It is often argued in electronic government literatures that usability and credibility issues have vital roles to play in the successful development and implementations of E-government systems (Kaaya, 2003; Fernandez et al., 2011; Huang and Benyoucef, 2014; Ansari et al., 2016).

Another problem plaguing E-government development in Nigeria as highlighted by Choudrie, et al., (2017) relates to the organisational and cultural perceptions of the individuals. A specific instance of the problem relating to organisational and cultural issues was the inability of foreign contractors to adapt to local customs and ways of working by the local people in Nigeria which resulted in adverse effects on the development and implementations of E-government project initiatives by the Lagos Stage government in Nigeria in the early 2000s (Choudrie *et al.*, 2017).

The failure of many electronic government projects in Africa necessitates an in-depth review of conditions and factors required to make electronic forms of government less prone to failure in Africa by examining the issues of E-government failures on a case-by-case and country-by-country basis. Although many E-government development factor have been investigated, and much knowledge gained, little has been seen in terms of effective implementation of E-government in Nigeria. The failure of electronic government projects in Nigeria and many Sub-Sahara Africa suggests that there exist deeper issues within E-government research, development, and implementation with respect to developing countries which have remained unaddressed. To address this lacuna in E-government research, an examination of the broader and specific issues confronting developing countries like Nigeria in her quest to improve public e-services using E-government is justifiable and necessary if Nigeria is to improve her E-government ranking and ratings.

To address problems of E-project failures in Africa and other developing countries, it is imperative that electronic government projects are examined within the context of the

host country, considering the available technological infrastructures and competencies alongside the organisational and cultural values, socioeconomic realities together with the prevailing political structure in the host nation. The foregoing arguments provide the motivation and rationale for this research work.

This research work is justified in that it empirically examined the challenges and benefits of E-government development in Lagos State and by extension in Nigeria through the lens of her socioeconomic realities, available technological infrastructures, political realities, and the organisational and cultural values as they currently are in real-life situation.

The researcher is interested in this study due to several reasons. First, the use of E-government service is significantly low in Nigeria in comparison to other highly populated countries (Adeyemo, 2011; Fatile, 2012; U.N, 2012, 2014; Mbanaso, 2015; Undesa, 2016). Therefore, it is necessary to investigate the reasons for the low usage of E-government in Nigeria. By investigating the reasons for the low usage of E-government in Nigeria the researcher will identify factors impeding and promoting E-government development in Nigeria, make reasonable recommendations to improve E-government development and implementation in Nigeria, and produce a context-specific model of best-practise E-government suitable for adoption by the Lagos State government and by extension all tiers of government in Nigeria. Second, E-government studies have mainly concentrated on developed western countries (Heeks & Bailur, 2007), thereby creating a gap in the variety of E-government research available within E-government literature. Also, foreign E-government studies that attempted to proffer solution to the relatively high IT project failures in Sub-Sahara African countries have been hugely inadequate (Schuppan, 2009; Olumoye & Govender, 2018). Therefore, a thorough investigation of the contextual factors affecting E-government development in Nigeria needs to be conducted to discuss and fill the gaps in both literature and practice of E-government in Nigeria and by extension other emerging countries of Africa. Third, E-government studies and frameworks in Nigeria have mainly examined cultural, socioeconomic, and technical issues affecting electronic government development and implementations (Adeyemo, 2011; Fatile, 2012; Ashaye, 2014; Choudrie *et al.*, 2017) with very few references to non-technical issues that are vital for sustainable E-government systems. The researcher considered extending available E-government frameworks in Nigeria with additional variable from Network processes (Guha & Chakrabarti, 2014) and those of cross-agency collaboration (Ansell & Gash, 2008; Gil-Garcia, 2012; Gil-Garcia &

Sayogo, 2016; Juell-Skielse et al., 2017) which have been discussed in literature vital to the development of a consensual E-government framework capable of strengthening E-government systems, adoption and use within the public-sector organisations in Nigeria. The outcome of this research is with a view to developing a consensual E-government framework capable of promoting inclusive governance in Nigeria, reducing economic corruption in government through transparency and accountability, and above all improving public-service delivery to the people.

1.5 BRIEF DESCRIPTION OF THE RESEARCH METHODOLOGY

This research adopts a mixed-method research approach based on pragmatism. In considering an epistemology and theoretical perspective the researcher has considered his perception of the world and how he sees and interprets things in it. The choice of pragmatism as an epistemological stance is primarily occasioned by the fact that to satisfy the aim of this research and to adequately answer the research questions, the most appropriate option is to conduct the research using a mixed-method research approach - starting with qualitative enquiries and moving into quantitative enquiries - to substantiate the research findings. To address the importance of the research question(s), Teddlie and Tashakkori stated that the "Pragmatists considers the research questions to be more important than either the method or the worldview that is supposed to underlie the method" (1998, p.21). They further asserted that "most good researchers prefer addressing their research questions with any methodological tool available" (1998, p.21). In pragmatist enquiry the researcher focuses on " the primary importance of the question asked rather than the methods, and on the use of multiple methods of data collection to inform the problems under study" (Creswell & Plano Clark 2011, p.41).

E-government study is an observable phenomenon and multidisciplinary in nature. E-government and E-governance hold subjective meanings and can provide adequate knowledge based on the nature of the study and what the research question(s) are (Creswell & Plano Clark, 2011; Saunders *et al.*, 2012). Although the researcher's method and choices might look inadequate to other researchers, the researcher stands by his choice and take confidence in the words of Coghlan and Brannick which stated that "Researchers' epistemological and ontological perspectives legitimise their distinctive way of doing research and determine what they consider as valid, legitimate contribution

to knowledge or theory irrespective of whether we called it development, confirmation, validation, creation, building or generation" (2005, p.5).

The research design clarifies the source of data used in a research and how data collected was processed and analyzed. Creswell and Plano Clark explained that the choice of research design methods should be carefully thought-through and must be informed by designs that "reflects interactions, priority, timing, and mixing" (2011, p.68). This research adopted an exploratory sequential design type because it sought to present an understanding of a specific situation - the exploration and understanding of factors affecting the development of E-government in Nigeria by exploring specific instances of E-government adoption and use within Lagos State government Ministries with a view to applying the outcomes to other tiers of government across Nigeria. The research design choice allows the researcher freedom to explore the nature of the research problem even though the outcome was unpredictable from the beginning of the research.

To conduct this research the researcher carried out a critical review of literatures in electronic government research and related fields such as: Information Technology use in public administrations; and Information Systems and Informatics use in public-sector organisations. As part of this research process, the researcher conducted a focus group discussion, interviewed E-government experts – both academics and practitioners, and conducted a purposive survey to elicit research participants views and experiences of electronic government use in Nigeria.

Case studies, interviews and survey questionnaires were part of the strategies used to carry out this research work.

According to Saunders *et al.,* (2012), the research strategy is a plan that helps the researcher to answer his research question(s). The research strategy can serve to provide the plan that guides and directs the research process and how it is to be conducted with regards to answering the research question(s) (Bryman, 2008).

In Case study research, the researcher collects considerable amount of information for learning through analytical investigation from multiple sources of inquiry on the subject as it exist in a real-life context (Yin, 2009). This type of research strategy makes use of in-depth contextual analysis of individuals or groups to explore the phenomenon of interest. Exploratory and explanatory research studies rely on case study strategy due to its usefulness in providing answers to the 'how', 'why', and 'what' questions (Saunders *et al.,* 2012).

The first aspect of this research work used the qualitative research technique. The qualitative enquiry began with the collection and analysis of the research data obtained from enquiries through multiple sources which included documentary achieves, conference papers, professional journals, textbooks, and case studies relating to E-government research and practise.

Qualitative enquiries according to Creswell and Plano Clark explores various narratives to "identify conditions, contexts, strategies, and consequences" (2011, p.71).

Using results from the first phase of the research, the researcher proceeded to the second phase which is the quantitative phase using the research data from the first phase as input. Results from the second phase tests the validity and accuracy of the data used in the first phase of the research. The researcher concludes the research by interpreting how the quantitative results developed from the initial qualitative phase complemented and confirmed the outcome of the research enquiry.

1.6 OUTLINE OF THE THESIS

This research work is divided into seven chapters. The first chapter is the introductory chapter which discussed the research background and context; the aim and objectives of the research; the research questions; the justification for E-government research; definition of key terms used in the research; the scope of the research; the limitations and delimitation of the research; key theoretical assumptions for the research; and a brief conclusion of the chapter.

Chapter two contains the literature review section of the research and it comprises of two parts: Part I: provided an in-depth review of extant literatures on E-government covering the various concepts, theories and models of E-government. Chapter two also examined selected E-government types in use by government around the world, most especially E-government types that are citizen-centred and promotes inclusive participation in governance.

Part II of chapter two focused on E-government development in Nigeria. It examined the benefits and challenges of E-government in Nigeria and discussed Nigeria's E-government journey to ascertain its level of development using well-established E-government models and benchmarks found in extant literatures on E-government.

Chapter three sets out the research conceptual framework together with the conceptual clarification to explain the ideas behind the chosen variables of the conceptual

framework. Chapter three explained the modalities for operationalising the variables within the conceptual framework and discussed each variable of the conceptual framework in detail.

Chapter four discussed the research method with brief description of the methodology used for the research. It explained the research philosophy, research approach, research strategy, research design, research visits and interviews, sampling and data collection technique.

Chapter five was devoted to the research data presentation and data analysis. Chapter five concluded with a revisit of the research conceptual framework introduced in chapter three and provided further clarity on the initial conceptual framework to reflect findings from the research surveys.

Chapter six summarised the research findings and highlighted the opinions of the research participants on the various factors that were identified in the research as the major factors impeding and promoting E-government development in Nigeria, and implications of the research.

Chapter seven discussed the research contributions to knowledge, recommendations for future research work and the research overall conclusions.

Table 1: OUTLINE OF THE THESIS

CHAPTER 1	INTRODUCTION
CHAPTER 2	LITERATURE REVIEW
CHAPTER 3	RESEARCH CONCEPTUAL FRAMEWORK
CHAPTER 4	THE RESEARCH STRUCTURE AND METHODOLOGY
CHAPTER 5	DATA PRESENTATION AND ANALYSIS
CHAPTER 6	SUMMARY OF FINDINGS, DISCUSSIONS, AND IMPLICATIONS
CHAPTER 7	RESEARCH CONCLUSION AND RECOMMENDATIONS

1.7 DEFINITION OF KEY TERMS

1.7.1 E-government

In the past three decades there has been varying definitions of electronic government. However, extant literatures on E-government points to significant degree of "theoretical fragmentation" (Yildiz, 2007) within the E-government research discipline arising from varying definitions and theoretical approaches to the discipline by many researchers of E-government (Heeks & Bailur, 2007; Yildiz, 2007; Khalil, 2011; Meijer & Bekkers, 2015). Though claims that E-government lacks solid theoretical framework has been disputed by Bannister and Connolly (2015).

Gartner (2000) cited in Fang (2002) defined electronic government as continuous optimisation of service delivery that involves citizens inclusion in government processes which has the potential to transform both internal and external relationship using technologies and new forms of media. Fang (2002) extended the definition of electronic government to include relationships between Government and the citizens (G2C), Government to employees (G2E), Government to Government (G2G), and Government to Business (G2B).

Nam (2014) opined that electronic government could be broadly defined as efforts by governments to provide its constituents with information and services they require by means of a wide range of Information and Communication Technologies (ICTs) and the Internet. The United Nation Organisation and The World Bank defined E-government in a similar way stating that E-government can be defined as the use by government and its Agencies of information communication technologies, the Internet, and mobile computing devices to transform relations with citizens, businesses, and governmental Agencies (The World Bank, 2015; United Nations, 2016).

1.7.2 E-Governance

The term ‘Governance’ comes from a Greek word (kebernon) which by definition means to control or steer from a position of authority (Bharti & Dwivedi, 2010). The terms electronic government and e-governance are synonymous and are often interchangeably used in E-government literatures (Bernhard, 2013). Some researchers have argued that there exist subtle differences between E-government and E-governance (Misuraca & Viscusi, 2013; Larsson & Grönlund, 2014).

Estevez and Janowski (2013), believe that E-governance is the applications of information technologies by governments for the transformation of government and to interact with the citizens to improve the society. According to Larsson and Grönlund (2014), E-government focuses on issues relating to resource coordination and distribution within the public-sector; while E-governance assumes a broader scope encompassing concepts relating to public institutions and private organisations. Larsson and Grönlund further stated that "the emphasis has shifted to focusing on governance, which is understood as a dynamic process involving a multitude of actors with a large degree of independence, rather than just focusing on government, i.e. the bureaucracy and institutions of the public-sector" (2014, p.137). The differences between Electronic government and Electronic governance is highlighted in the diagram below.

Table 2: Differences between E-government and E-governance.

e-Government and e-Governance	
GOVERNMENT	**GOVERNANCE**
superstructure	functionality
decisions	processes
rules	goals
roles	performance
implementation	coordination
Outputs	outcomes
E-Government	**E-Governance**
electronic service delivery	electronic consultation
electronic workflow	electronic controllership
electronic voting	electronic engagement
electronic productivity	networked societal guidance

Source: www.jagranjosh.com

1.7.3 E-government development index (EGDI)

Electronic government development index (EGDI) as conceptualised by the United Nations is the comprehensive scoring of national administrator's capacity to use Internet-enabled technologies to deliver public-sector services to the citizens (U.N, 2010). The U.N EGDI framework comprises the Online Service Index (OSI), the Telecommunication Infrastructure Index (TII), and the Human Capital Index (HCI). The EGDI is not designed

to capture E-government index of participating countries in an absolute manner. The EGDI aims to rate as fairly as possible the performances of national governments through their online presence in comparison to each other (U.N, 2010).

1.7.4 E-government Maturity Models

Electronic government could be studied and understood through an examination of the models of its developmental stages (Yildiz, 2007). Electronic government maturity models are frame of references describing the various growth and development stages of E-government (Heeks & Bailur, 2007; Valdés *et al.*, 2011). The existing frameworks and models of E-government in literature appears to be fragmented with regards to its perspectives and themes. Lee observed that none of the existing models of E-government is "comprehensive enough to be an anchoring frame of reference for translation among the models and stages" (2010, p.229). Lee's opinion suggests that E-government index measurements are still in the developmental stages.

A country's E-government participation can be evaluated by mapping the country's E-government development level to an internationally acceptable measurement framework to obtain its E-government development index. The EGDI is a good indicator of the level of maturity of E-government programmes of different countries. Popular E-government Maturity Models are those of Layne and Lee (2001), UN and ASPA Maturity Model (2002), Andersen and Henriksen (2006), and the eGOV-MM Maturity Model by Valdes *et al.,* (2011).

1.7.5 E-government service quality (e-GovQual)

The quality of online public services should be analysed and accounted for on continuous basis by responsible authorities to ensure that an acceptable level of service delivery is met by e-service providers. If the quality of online service delivery is monitored and regularly reported by E-government Stakeholders it could help people in authority responsible for E-government development and implementation to formulate strategies to improve e-services initiatives that are rendered to the public, and in turn increase the levels of satisfaction of the recipients of such e-services (Sá et al., 2016).

Papadomichelaki and Mentzas (2009) created and contextualised the e-GovQual model to measure the qualities of electronic government services. e-GovQual has six dimensions namely: Ease of use, Trust (Security and Privacy), Functionalities of the interaction

environment, Reliability, Contents and appearances of information, and Citizen supports (Interactivity).

1.7.6 Whole-of-Government (WoG)

According to Christensen and Lægreid (2006), the concept behind the Whole-of-government as a governance paradigm is ideally about government Agencies and Departments working across organisational boundaries in some collaborative ways toward achieving the same objectives – delivery of online e-services. The approaches to a Whole-of-Government system of governance can either be formal or informal (Christensen & Lægreid, 2006). Citing Ojo *et al.,* (2011) the United Nations Department of Economic and Social Affairs (UNDESA) defined Whole-of-Government as "Agencies working across portfolio boundaries to jointly achieve integrated responses to the issues of policy development, program management and service delivery" (2014, p.75). WoG is useful in connecting individual and government systems in an integrated manner leading to government being able to deliver e-services in a 'one-stop-shop' format facilitated by modern ICTs and the Internet (U.N, 2016).

1.7.7 E-government Interoperability Framework (IF)

E-government Interoperability Framework (IF) can be defined as a set of document outlining common suite of vocabularies, guidelines, concepts, principles, policies, and recommendations that are prescribed for, and binds government Agencies together in the provisioning of e-services (Lisboa & Soares, 2014). The interoperability framework provides the mechanism that enables various government Ministries, Departments, and Agencies (MDAs) to work seamlessly across multiple platforms and organisation boundaries in a coordinated manner.

1.7.8 Networks

The term "Network" is defined in literatures in a variety of ways and manner depending on the subject matter under consideration (Marsh & Smith, 2000). Networks could be either formal or informal. According to Isett *et al*., "formal Networks are consciously created with some sort of binding agreement for participation; whereas informal Networks are more organically derived" (2011, p.162). O'Toole opined that the "institutional glue congealing Networked ties may include authority bonds, exchange

relations, and coalitions based on common interest, all within a single multi-unit structure" (1997, p.45).

In agreement with O'Toole's definition of Networks, Bardach suggested that a Network can be defined as "working relationships among actors such that any relationship has the potential both to elicit action and to communicate information efficiently" (2002, p.4). For this research work, the researcher defined Networks as a complex mix of various Stakeholders or Actors with similar interests who work together in the development and implementation of Network policies towards common goals and objectives. Although there exist different kinds of Networks which serve different interests, of concern to this research work is the Network type that is organised by the government to use both State and non-State resources and capacities to advance and pursue public goals and interest with the aid of Internet-enabled Information Communication Technologies. This type of Network paradigm is usually referred to in literature as Government Information Networks (Janowski *et al.*, 2012). Henning stated that "GINs can improve the availability and quality of information, both at national and global levels. As a result, they can contribute to more coherent development policies by enabling Stakeholders to see the "bigger picture" and allowing for more informed decision-making" (Henning, 2016, p.2).

1.7.9 Networking Process

Following from the above definition of Networks, the 'Network process' referred to in this study shall be limited to the necessary steps required in the formation of public-service Networks which are: Network partner selection, Network shared vision, Institutionalisation of Network vision, Network structure, and Network incentives (Guha & Chakrabarti, 2014).

1.7.10 Cross-agency Collaboration

Cross-agency collaboration is not an entirely new concept in government. The concept of cross-agency collaboration has been loosely referred to in literature as "Collaborative Public Management" (Agranoff & McGuire, 2004; O'Leary *et al*., 2006; O'Leary & Vij, 2012); "Collaborative Governance" (Ansell & Gash, 2008; Emerson *et al.,* 2012); and "Collaborative E-government" (Bertot et al., 2012; Chun et al., 2012). Although Collaborative governance is closely related concept to collaborative public management. Although according to Kapucu *et al.,* (2012) the two concepts differ both in scope and substance. He asserted that while collaborative public management generally has a

narrower scope, collaborative governance often entails global scope with a focus on tackling wider problems within various societies by engaging the citizens through collaborative participations and improvement of institutional structures (Kapucu *et al.*, 2012). Gil Garcia (2012) described cross-agency collaboration as ways that government Agencies work and share databases and information across organisational boundaries. Gil-Garcia and Sayogo (2016) suggested that sharing of data and information using ICTs should be the norm rather than the exception between national and international Agencies.

1.7.11 Technology

Technology has a vast and varied definition; the context of use often determines the meaning. For the purpose of this research work, technology is defined as the purposeful application of scientific knowledge; especially electronic or digital products and systems to the production and utilisation of digital products and delivery of services to solve day to day problems (Bernard & Pelto, 1987; Welch & Feeney, 2014). Aspects of technology discussed in this research work shall be limited to the applications of Information Communication and Technologies (ICTs) to the process of governance.

ICTs and related technologies are vital in the development and implementation of E-government projects. Studies have shown that technological capacity of a nation is a significant predictor of how successful the adoption of E-government initiatives by organisations to improve the efficiency government can prove to be (Arduini *et al.*, 2013; Luna-Reyes *et al*., 2013; Welch & Feeney, 2014).

1.7.12 Organisation

The term ‘Organisation’ for the purpose of this research work refers to public institutions and comprises of institutional innovativeness, organisational culture, and the quality of human resource it possesses (Burn & Robins 2003; Schein 2010). Citing Scott (2007), Welch and Feeney noted that "Organisations are subject to regulative, normative, and cultural-cognitive elements, so while external government rules and mandates may require the adoption of E-government initiatives, effective organisational change requires normative shifts in thinking about such initiatives" (2014, p.508). The statement by Welch and Feeney indicates that Organisations both private and public may need to do more than simply follow government directives if it is to be successful in implementing

innovative governance systems such as e-services delivered to the public using ICTs and the Internet.

1.7.13 Environment

The definition of the term 'environment' in the context of this research work includes an organisation's socio-economic surrounding. It comprises of multiple Stakeholders such as organisation members, customers who are members of the public, vendors of various artefacts related to E-government, Competitors and interest groups, and the government (Tornatzky & Fleischer, 1990). Angeles (2014) suggested that Stakeholders can influence how a firm will interpret its need for innovation, its ability to acquire the resources to implement innovation, and its capability to deploy such innovations.

1.8 SCOPE OF THE RESEARCH

The purpose of this research is to identify the challenges facing, and opportunities available for the development of E-government in Nigeria. The scope of the study is limited to Lagos State government secretariat in Alausa-Ikeja. The study focused on the interaction between various E-government Stakeholders in Lagos State government MDAs, and their views on the use of ICTs for public-service delivery.

The research scope is limited to the use of ICTs and the Internet in the public-sector organisations to deliver public e-services and how such services can be used to facilitate the improvement of relationships between Government-to-Government (G2G) organisations, Government-to-Citizens (G2C), and Government-to-Employees (G2E).

An essential aspect of this study explored in detail how the Network concepts and Cross-agency collaboration can be useful in strengthening E-government development (Guha & Chakrabarti, 2014; Gil-Garcia & Sayogo, 2016; Ojo & Mellouli, 2016; Juell-Skielse *et al*., 2017) with a view to adapting best forms of E-government practises to improve E-government frameworks in Nigeria.

1.9 LIMITATION OF THE STUDY

The researcher was aware of the various limitations of the research and does not intent the results of this research work to be a one-cap-fit-all solution to the numerous public-sector service delivery challenges in Nigerian. The significant limitations the researcher

encountered while conducting this research work can be classified as being four-folds. First, the problem of obtaining relevant and up-to-date information and documentations on E-government development and programmes from governmental organisations proved very difficult and time-consuming. Many of the Ministries the researcher visited were busy preparing for public elections (2015 Presidential and Governorship elections). The prevailing political environment at that time adversely affected the researcher's ability to track down senior officials of the Ministries to take part in the research interviews. The researcher had to use the influence of his brother who is a director in one of the government Ministries to gain access to other senior government officials that were identified and contacted to take part in interviews and for fact finding activities.

Second, public-sector institutions visited for the purpose of this research and the research participants were mainly limited to Lagos State Government Ministries and Agencies due to the researcher’s limited financial resources and time constraints. The deteriorating security situation in the country also prevented the researcher from visiting other regions of Nigeria to conduct interviews and surveys. The researcher believes that more could be done to capture the thoughts and E-government perceptions of other people in Nigeria by extending the research to cover other regions of the country.

Third, generalisation issues arising from using small sampling size from the target population. The researcher chose to use purposive sampling which is a sampling technique that relies on subjective judgement and allows the researcher to select cases that will help the researcher to best answer the research question(s) and to meet the research objectives (Saunders et al., 2012). According to Neuman, purposive sampling is ideal for use when the researcher is working with small sample sizes as in case study, and the case study is very informative (2005). In this research work, the selection of key Ministries and government parastatals in Lagos State of Nigeria is ideal due to the diverse nature of the Lagos state government workforce. Lagos State is also seen as a trailblazer in the development and implementation of e-services in Nigeria.

Fourth, the researcher chose to examine a small amount of correlations between the variables in the research conceptual framework, however there are other interesting correlations between the variables of research conceptual framework that have not been included in this work which should be investigated by other e-government researchers in future work.

1.10 DELIMITATION OF THE STUDY

This study focused on the empirical investigation of the factors facilitating and impeding the development of electronic government in the public-sector organisations in Nigeria. The research inquiry was conducted from 2013 to 2018 and confined mainly to the public-sector institutions within the Lagos state government secretariat at Alausa-Ikeja.

Using purposive sampling technique, the study considered views and opinions from selected members of the public-sector organisations with regards to their experiences of using E-government services and their opinions on ways to improve E-government uptake in the Nigerian.

The purpose of this study is investigating opportunities and challenges of E-government in Nigeria with a view to development a contextual E-government model that is acceptable across all tiers or government in Nigeria and not with a view to development and testing of hypothesis related to E-government in Nigeria. Although findings from this research could be useful as input for future research that may seek to develop, and test hypothesis based on the outcome of this research work.

1.11 KEY THEORETICAL ASSUMPTIONS

E-government research has been conducted by researchers in large volumes (Larsson & Grönlund, 2014), and from different perspectives using various E-government theories and frameworks (Bannister & Connolly, 2015). The key theoretical assumptions employed in this research work are discussed below:

1.11.1 Digital Era Government (DEG)

The impact of Information Systems (IS), especially Information and Communication Technologies (ICTs) in Public Administration (PA) is a subject that has long been debated in E-government literatures (Fang, 2002; Luna-Reyes *et al*., 2013; Millard, 2013; Luna-Reyes & Gil-Garcia, 2014; Sivarajah et al., 2015; Ojo & Mellouli, 2016; Verkijika & Wet, 2018). When digital government research began a little over three decades ago, questions were asked by E-government researchers and practitioners about the possibilities of using ICTs to reform government in transformational ways (Zhang *et al*., 2014; Janowski, 2015; Weerakkody *et al.*, 2016). To answer some of the questions raised by E-government researchers concerning the transformational abilities of ICTs in the

management of public-sector organisations, Margetts and Dunleavy (2013) cited in (Tassabehji *et al*., 2016) pointed to the concept of Digital Era Government (DEG) to highlight contemporary technologies as the drivers for a competitive and innovative form of government. In general terms, digital era government relates to using ICTs in government as means to an effective and efficient public service facilitated through the use of Internet-enabled digital devices. These modern-day digital devices and the Internet when carefully harnessed and deployed in public-sector institutions has the capacity to improve relationship between government and the citizens (Fang, 2002; Ku *et al.*, 2016; Tassabehji et al., 2016). It is important to note that meaningful transformation of public-sector services will require governments to use modern ICTs in ways that are not only responsive to the citizen's needs, but capable of solving social ills in the society (Tassabehji *et al.*, 2016). Although digital government promises improvements over previously known models of government such as the Weberian and the 'New Public Management' (Millard, 2013; Zhang *et al.*, 2014), digital government initiatives are very complex endeavours with multiple challenges to its development and implementation (Ashaye, 2014; Meijer, 2015; Oseni *et al.*, 2015). The complexities in developing digital government projects stem from the fact that technology in itself is sophisticated – entailing multiple barriers that must be overcome – if E-government systems are to function as intended (Meijer, 2015). According to Tassabehji *et al.*, (2016) the sophisticated processes of developing and implementing functional E-government systems has led E-government sceptics to argue whether digital government systems are capable of evolving through multiple levels of government, and move towards the realisation of governance using modern technologies powered by the Internet.

Many studies of technological innovations and diffusion in organisations mostly suggested that the various needs and characteristics of organisations often determine the manner in which technologies are pursued and deployed within different organisations (Zhu et al., 2006). Cinite *et al.*, (2009) cited in Tassabehji et al., noted that experiences of failed attempts at transforming the public-sector services using ICTs within the last decade has been mainly due to "embedded norms, jurisdictions, bureaucracy, poor senior leadership, and complexity of reforms" (2016, p.223). Irrespective of the setbacks in attempts to reform public-sector organisations using technology, there are sufficient evidence from literature suggesting DEG's influence is slowly diffusing and being increasing adopted into public-sector organisations (Tassabehji *et al.*, 2016). Digital era

government is often viewed as a by-product of the New Public Management (NPM) policies in its drive towards effective and efficient public-sector management.

1.11.2 Unified Theory of Acceptance and Use of Technology (UTAUT)

Visionary leaders who understand the changing landscape of public-sector services brought about by advances in technologies and the society, will not only explore transformative uses of ICTs in public-sector institutions to foster inclusiveness in governance, but also find ways of adapting new technologies to achieve better public-sector management.

Various technology acceptance models have been studied by E-government researchers to explore how government can leverage on modern innovative technologies to improve public service delivery, improved relationship with citizens, and to promote good governance (AlAwadhi & Morris, 2008; Shareef *et al.*, 2011; Valdés *et al.*, 2011; Luna-Reyes *et al.*, 2012; Venkatesh et al., 2012; Hung *et al.*, 2013; Nam, 2014).

The unified theory of acceptance and use of technology (UTUAT) developed by Venkatesh and his co-researchers is regarded as a technology acceptance model developed to explain the user intentions and behaviours towards the use of information systems.

UTUAT identified four key components (performance expectancy, effort expectancy, social influence, and facilitating conditions) together with four moderator variables (age, gender, experience, and voluntariness) to be closely related to individual's intentions to use technology and the actual use of the technology within an organisational context (Ventakesh et al., 2003).

Alawadhi and Morris (2008) discussed the (UTAUT) model to explore factors that determines the use of E-government services in Kuwait. They concluded that to get the citizens of Kuwait to use and adopt E-government services, decision-makers in government must first demonstrate that the E-government services they intend to provide are efficient and useful to the people.

In discussing the effects of technology use in organisations, Bernhard (2014) analysed the experiences and attitudes of staff who felt threatened by the introduction of ICTs in two separate contact centres in Sweden. Her study concluded that although the use of ICTs is essential for organisational transformation, the organisational settings together with the organisation's internal anchoring were observed to have more significant constraints than the new technologies for implementation of a local E-government

initiative in the contact centres that were studied. This view supports the notion that if organisations adopts new rule or policy related to E-government and information technology, their organisational culture could affect whether the new rules and reforms are effectively adopted (Welch & Feeney, 2014).

1.11.3 Institutional Theory

Institutional theory is instrumental to the understanding of organisational settings (Powell & DiMaggio, 1991; Scott, 2001). Institutions are often seen as a guideline and also a constraint on how peoples behave within a given environment or organisation (Choudrie *et al.*, 2017). Institutional guidelines often draw upon societal norms and cultural principles (Luna-Reyes & Gil-Garcia 2011) to lay down acceptable behaviour and modus operandi within organisation. Information Communication Technology (ICT) projects are complicated and often involves complex set of decision and interactions between different Stakeholders. These interactions are often constrained by institutional arrangements (Fountain, 2001). How, and the extent to which an organisation embraces and embed ICTs will largely depend on the organisation's culture and perception of innovations and the use of technologies. Previous researchers have used Institutional theory to understand ICTs in governmental organisations (Fountain, 2001; Butler 2003) and how technology is enacted within organisations. Institutional theories help to explain how ICTs influence organisational arrangements, and how such arrangement affects the selection, design, and use of ICTs within organisations.

As technologies continue to evolve and get institutionalised into organisation's day-to-day operations, it gradually becomes assimilated by the employees as routines (Weerakkody *et al.*, 2016). A well-known Institutional Framework used to study information technologies in government settings is the Technology Enactment Framework (TEF). According to Fountain (2001), the Technological enactment framework theory explains the effects of embedding ICTs in organisational arrangements used by government Agencies to conduct their activities. Fountain also discussed how technology can be embedded within organisations.

1.11.4 TECHNOLOGY, ORGANISATION, AND ENVIRONMENT(TOE) THEORY

Technology, organisation, and environment (TOE) theory was developed by Tornatzky and Fleischer. It specifies three main factors that influences adoption and organisational usages of technological innovations (Tornatzky & Fleischer, 1990). They explained that technology context includes the internal and external technology which may be useful in improving organisational productivity. They define the organizational context in terms of the size of the organisation, it's scope, quality, characteristics, and availability of the firm's technology and financial resources, complexity of managerial structure, as well as environmental context which according to Tornazky and Fleischer refers to the firm's industry and dealings with competitors, business partners, and the government (Tornatzky & Fleischer, 1990). Although the TOE theory finds its primary application in the business world especially e-commerce, it is a useful framework in E-government development and applications. This study adopts the TOE theory as an integral part underpinning the conceptual framework development.

1.11.5 Collaborative Governance

Chun *et al*., defines the term 'collaboration' as "a process or a set of activities in which two or more agents work together to achieve shared goals" (2012, p.6). There exist several reasons for public organisations to collaborate with a view to participating in shared services (Yıldız & Saylam, 2013), shared product development, and shared value co-creation (Lindgren, 2013). One could argue that as the society evolves, and knowledge becomes increasingly accessible and distributed, public institutions grow in complexity and becomes more interdependent. The new paradigm of governance (collaborative Network) relies more on the powers of ICTs to build and sustain the relationships between Networks of E-government Stakeholders across all tiers of government. E-government is a governance paradigm that relies on the abilities of various governmental organisations to collaborate and share resources to achieve mutual goals and objectives.

Ansell and Gash suggested that collaborative governance within the public-sector organisations "emerged as a response to the failures of downstream implementation and the high cost and politicisation of regulation" (2007, p.2). They further argued that collaborative form of government "developed as an alternative to the adversarialism of interest group pluralism and the accountability failures of managerialism (2007, p.2).

Inter-organizational partnerships are well-recognised in many E-government literatures to be powerful strategies to improve public-sector initiatives using innovative technologies (Gil-Garcia, 2012).

Paagman *et al*., (2015) found issues relating to cost reduction as a primary motive expressed in many E-government literatures for organisations to shared resources and common services. Other reasons suggested by Praagman and his colleagues to promote collaboration were he need for improved service quality, access to external resources, improved efficiency in service delivery, and standardised processes Klievink *et al*., (2016), suggested that the type of ICT innovations that is both transformational and useful for connecting different Stakeholders, private and the public is Information Platforms.

Using the conceptualisation of platforms as a socio-technical concept suggested by Baldwin & Woodard (2009), Klievink *et al*., argued that Information Technology infrastructure (i.e. interfaces and services) and governance mechanisms (i.e. multiple user groups, decision-making structures, and stakeholder objectives) should be considered together when studying public-private platforms as an instrument for public-sector transformation (Klievink *et al.,* 2016). Collaborative governance could assume a global scope, focusing on solving societal problems by engaging the citizens through collaborative participation geared towards improving institutional structures (Kapucu *et al.,* 2012). Gil Garcia (2012) described cross-agency collaboration as ways government Agencies could work and share databases and information across organisational boundaries.

1.11.6 Actor-Network Theory (ANT)

Actor Network Theory (ANT) argues that Actors, irrespective of the form they exist in, assume equal importance for the social Network they belong to. Actor Network theory with respect to E-government studies assume that Information technologies, infrastructure, organisation, hardware, and people form an integral part of Networks which comprises both human and non-human elements (Walsham, 1997).

Researchers have used Actor-Network concepts to explore the benefits of information and resource sharing among various actors and Stakeholders within the public-sector organisations in emerging nations. Stanforth (2007) used the Actor-Network Theory (ANT) framework to understand how an ICT-related project that supported fiscal reform program was implementation in Sri Lanka. She observed how numerous actors involved in developing and implementing an ICT-based accounting system in Sri Lanka interacted

with each other as they worked together towards achieving the project goal. She concluded from the study that “Information system innovation is a contingent outcome that is determined not by the properties of the technology but by the result of contested interests of actors linked together in complex Networks” (Stanforth 2007, p.51). Stanforth argued that Stakeholders interest has a significant bearing on Information Technology project development outcomes irrespective of the nature of the technologies itself.

Guha and Chakrabarti (2014) applied the Network concept (Network process) to three different cases of public service projects in India and found that fundamental reasons for the ‘design-reality gaps’ and E-government failures in India were traceable to inadequate understanding and the requirements of E-government’s Networked nature. Guha and Chakrabati stated that though many factors may be responsible for E-government failures, the awareness about many of the challenging factors has not yielded much success when implementing E-government projects. In proposing a solution to mitigate E-government project failures, Guha and Chakrabati extensively discussed how the understanding of the Network processes vis-à-vis Partner selection, shared vision, Institutionalisation of Network goals, Incentives design, and Network structure are essential factors needed for an effective E-government system. They concluded that if the Network processes are carefully followed, E-government projects will be less prone to failures (Guha & Chakrabarti, 2014).

Networking of government information systems and cross-agency collaboration between E-government Stakeholders must be encouraged and actively pursued by every stakeholder interested in participating in a ‘connected’ form of governance architecture (U.N, 2008, 2012, 2016). Janowski *et al*., explained that Network concepts have extended to other research domains such as policy Network, collaborative Network, and governance Network (2011, p.51). The use of Network concepts in public-service organisations will facilitate E-government development and reduce E-government’s project failures in emerging nations (Stanforth, 2007; Guha & Chakrabarti, 2014).

1.11.7 Stakeholder Theory

Stakeholders is defined by Freeman as "any group or individual who can affect or is affected by the achievement of the organisation's objectives" (Freeman, 1984, p.46). Freeman went on to explain the term "stakeholder" with a bias in definition towards "stockholders" as opposed to "Stakeholders" that was previously used. Rather than

defining the unit of analysis as "interest groups" or "constituencies", the term "stakeholder" deliberately denotes a contrast to "stockholders", or "shareholders (Freeman, 1999). This refined definition of "Stakeholders" allows broader scope for the application of the concept of stakeholder theory outside the traditional business management discipline.

Mitchell et al., (1997) suggested that as an entity, a stakeholder can refer to individuals, groups, organisations, institutions, societies and even the natural environment. Although stakeholder theory in itself is originally an explicit theory on private sector entities, scholars have been applying the concept to public-sector organisations (Scholl, 2001). The notion of applying stakeholder theory to public-sector services has been supported by other E-government researchers (Freeman *et al.,* 2010).

1.11 CONCLUSION

In chapter one the researcher presented the background and context of the research work. The researcher highlighted the importance of recognising E-government research as an emerging discipline currently at the crossroads of other disciplines (Heeks & Bailur, 2007). The multiple definitions of E-government found in literature has led to a definitional vagueness (Yildiz, 2007) that has allowed E-government research to be subjected to multiple research theories and frameworks by E-government researchers (Bannister & Connolly, 2015).

Chapter one discussed the expansion of the E-government phenomenon mainly due to advancement in ICTs and the increasing use of web-enabled devices and the Internet to enhance public-sector service delivery (Meijer, 2015; Gil-Garcia & Sayogo, 2016; Undesa, 2016; Choudrie *et al.*, 2017).

The researcher believe that E-government research in Nigeria has focused mainly on socio-economic and technical issues (Fatile, 2012; Oseni *et al.*, 2015; Olumoye & Govender, 2018; Verkijika & Wet, 2018) with less attention given to the critical aspects of building government Networks and cross-agency collaboration (Guha & Chakrabarti, 2014; Lisboa & Soares, 2014b; Juell-Skielse *et al.*, 2017). The result of inadequate research on government information Networks and collaboration among public-sector organisations has resulted in poor E-government frameworks and models in Nigeria; which in turn has resulted in poor usages and adoption of E-government initiatives in

Nigeria. The siloed nature of many governmental organisations in Nigeria hinders easy communication between government workers and the limits citizen's access to online government services. To overcome the challenges of siloed governmental structures, deliberate processes of re-engineering existing models of information flows and decision-making processes within government Agencies must be sought and pursued by governmental authorities at every level of government (Undesa, 2016; OECD, 2017). The re-engineering process towards an integrated form of governance structure must be based on a culture of trust and Network building, co-operation and collaboration between governmental Agencies and the sharing of resources across organisational boundaries. In addressing these issues, the researcher aimed to investigate factors impeding and promoting E-government development in Nigeria through the lens of Networking processes and collaborative participation in the public-sector organisation in Nigeria.

CHAPTER 2

LITERATURE REVIEW

2.0 INTRODUCTION

Chapter two reviewed relevant literatures on the growing phenomenon of E-government innovation within public-sector services. The literature on public-sector service innovation has been rapidly expanding since the 1990's (Meijer, 2015) as transformational changes in E-government activities are seen as a continuous process (Olumoye & Govender, 2018). This chapter describe in detail the various E-government concepts, theories, frameworks, and maturity models that have been used by E-government researchers to describe E-government development stages over the last thirty years. The chapter examined Information and Communication Technology (ICT) in the context of its use and adoption to promote good governance in Nigeria and other countries around the world and how ICTs are playing significant roles in the transformation of the public-sector organisations (Zhang *et al.*, 2014; Janowski, 2015; Tassabehji *et al.*, 2016; Weerakkody *et al.*, 2016) with gradual shift from hierarchical and bureaucratic system of government to a newer form of governance where the citizens take up active and inclusive roles, and are placed at the centre of government activities (Chen, 2010; Osman *et al.*, 2014; Linders *et al*., 2015).

This chapter also discussed the concept of the Whole-of-Government (WoG) approach to governance. The United Nations Department of Economic and Social Affairs (UNDESA) define Whole-of-Government as "Agencies working across portfolio boundaries to jointly achieve integrated responses to the issues of policy development, programme management and service delivery" (2014, p.75). WoG is a governance concept often associated with the concept of a 'joined-up' or 'connected' governance system working together across organisational boundaries to deliver public-sector services using Internet-enabled mechanisms.

Chapter is used to review various concepts of Networking processes alongside fundamental principles of collaborative governance system.

Janowski *et al.*, (2011), detailed the adaptive use of 'Networks' in government and explored how governmental organisations could collaborate with both state and non-state actors, working together to make the best use of limited financial resources, skills and

capabilities to improve public-sector services and to proffer solutions to societal problems. Chun *et al.,* (2010) described collaborative electronic government as "ICT-facilitated collaborative environment for governments" - a situation whereby collaboration could be interaction-based and occurring among government Agencies (G2G); between governments and businesses (G2B); or between governments and citizens (G2C), (2012, p.6).

Ansell & Gash (2008) suggested that while Information Communication Technologies (ICTs) are increasingly used within various governmental organisations and works across organisational boundary lines to provide inter-organisational platforms for collaborative participation among different governmental Agencies, more needs to be done to understand how consensus is built and reached among E-government Stakeholders. Collaboration and consensus-building towards E-government development is discussed in detail in chapter three.

Chapter two briefly explored ICT and E-government experiences in Nigeria through reviews of extant E-government literature available in the public domain. It examined the Nigerian government's efforts toward developing E-government initiatives and primarily investigated the challenges and benefits of E-government development and implementation in Nigeria through the lens of the Lagos State public-sector institutions. The choice of selecting Lagos State as the focal point of interest is because of the considerable investment in E-government initiatives by the Lagos State government (Choudrie *et al.*, 2017) over the last two decades. Chapter two also reviewed previous E-government frameworks in Nigeria and suggested ways to improve and strengthened the E-government models available in Nigeria. Some key government websites were visited to evaluate their level of maturity in terms of the available properties found on the websites.

Chapter two concluded with a review of selected E-government projects in some countries around the world to ascertain current trends in E-government development and applications.

2.1 E-GOVERNMENT DEFINITIONS, THEORIES, CONCEPTS, BENCHMARKS, FRAMEWORKS AND MODELS

E-government proliferation across the world in recent years has led researchers and academics to pay more attention to E-government (Veeramootoo *et al.*, 2018) respecting

its definitions and concepts (Almarabeh & AbuAli, 2010; Erman & Todorovski, 2011; Alcaide–Muñoz *et al.*, 2017), innovations and implementations (Lee, 2010; Choi *et al.*, 2016; OECD, 2017), and management practises (Paagman *et al.*, 2015; Mergel, Gong et al., 2018). The researcher explored the phenomenon of E-government beginning with a brief overview of the notion of governance. According to Bharti and Dwivedi (2010), governance or government is a derivative of the Greek terminology 'Kebernon' – a concept often associated with the steering or controlling from a position of authority. Therefore, governance can be defined as a process by which organisations are directed, controlled, and held to account (Savic, 2006; Bharti & Dwivedi, 2010). Harrison and Sayogo believe that "in a representative democracy, legitimacy is based upon citizens' trust that elected representatives and government administrators are implementing the will of the people" (2014, p.513). This kind of trust is built, sustained and nurtured by complex interactions between various core E-government elements and Actors. Researchers have identified that core elements of E-government developmental process revolves around issues of accountability, information transparency, inclusiveness and citizen participation (Harrison & Sayogo, 2014). UNESCO (2005) defines governance as: "a basic concept which refers to the exercise of political, economic, and administrative authority in the management of a country's affairs" (2006, p.17). Savic stated that the concept of governance must "include the citizens' articulation of their interests and exercise of their legal rights and obligations" (2006, p.17). Related terms recently adapted to public-sector organisation is the concept of 'good governance' and 'open government'. Basu (2004) posited that the objectives of E-governance are those of socioeconomic, political, and administrative exercises to manage the affairs of the country at every level of government. In support of Basus' position, Okot-Uma (2004) cited in Savic, asserted that good governance includes processes and structures guiding the socioeconomic and political relationships especially as they relate to "commitment to democratic values, norms and practices, trusted services, and to just and honest business" (2006, p.20). In recognising the need for good governance, the United Nation's 2030 agenda for sustainable development acknowledged that "democracy, good governance and the rule of law, as well as an enabling environment at the national and international levels, are essential for sustainable development, including sustained and inclusive economic growth, social development, environmental protection and the eradication of poverty and hunger" (United Nations, 2016, p.22). Citizen engagement and participation are essential to achieving good governance and broader social and economic goals. Governments

could leverage on the vast potential offered by the increasing proliferation of the Internet and web-enabled technologies to engage citizens throughout the process of developing and implementing E-government programme developed around specific interests and needs of the public. By using electronic means to provide access to public information, consultations, and feedbacks, governments will be deemed to be supportive of good governance.

2.1.1 E-government definitions

Various definitions of E-government have been proposed over the years by numerous E-government scholars who have attempted to define E-government using ideas and experiences imported from their various research domains (Grönlund & Horan, 2005; Bannister & Connolly, 2015). According to Taylor *et al.*, (2007) cited in Zhang *et al.*, "E-government has become a primary trend in information revolution and almost every country in the world has been part of it"(2014, p.631). The growing trend in E-government has given rise to many research outlets such as *Government Information Quarterly journals, Conference proceedings for the European Conference on E-government*, and *E-government survey reports of the United Nations Department for Economic and Social Affairs* (UNDESA). However, literatures on E-government points to a significantly high-level of "theoretical fragmentation" within the research discipline which arose as a result of varying definitions and theoretical approaches by many researchers of E-government (Heeks and Bailur, 2007; Yildiz, 2007; Khalil, 2011; Meijer and Bekkers, 2015). The diversity of E-government research and applications enriches and significantly influence the various sectors and stages of E-government processes (Ndou, 2004; Heeks & Bailur, 2007). E-government as a multidisciplinary phenomenon is manifested in the way researchers have been using a variety of established theories from other disciplines to study and explain E-government phenomenon from diverse academic standpoints (Bannister & Connolly, 2015). Heeks and Bailur (2007) observed that E-government could be perceived to be standing at the crossroads between computer science, information systems, public administration, and political science. The view from Heeks and Bailur provided at least one reason for the apparent lack of consensus that exist to this day amongst E-government researchers with regards to a clear definition and a guiding theoretical framework for which E-government as a research discipline could stand. Although claims that E-government lacks a solid theoretical framework have been seriously disputed by Bannister and Connolly (2015) Although there exist many

definitions of E-government in extant literature, researchers of E-government have yet to agree on a standard definition (Khalil, 2011). Interestingly though, one readily observes that central to many of the definitions proposed by different researchers is the concept of E-government introduced in 1979 by Simon Nora and Alain Minc which was documented in their report to the French President in 1979 on ways to build civil societies using telematics (Nora & Minc, 1980). Nora and Minc defined telematics as the combination of computers and telecommunications with the aim of improving delivery of public-sector services in an efficient and effective way. Their report contained how many aspects of society such as education, health and other general activities of life can benefit from using telematics. The apparent success of e-commerce in the private-sector and other successful 'e-innovations' and technology-lead initiatives has motivated public-sector organisations to rethink the viability of hierarchical and bureaucratic models of government processes in majority of the public-sector organisations around the world today (Ndou, 2004). According to Tapscott and Caston (1993) cited in Ndou (2004) the gradual changes in the ways governments are evolving from being a monolithic entity towards citizen-centred mode of government has been orchestrated by the growing capabilities of ICTs and the rapid proliferation of the Internet. Improvements in E-government research and further refinement of E-government framework designs has seen researchers modifying legacy E-government frameworks and models to include additional constructs such as transparency, accountability, and citizen participation in governance (Mohammad *et al.*, 2009) to further expand the capabilities of the E-government paradigm.

Gronlund and Horan (2005) claimed that E-government study and practice began in the late 1990s to share innovative public administration experiences among public administrators and Information Sytems researchers and practitioners. In Grönlund's (2004) survey of E-government research cited in (Lofstedt, 2005), he had observed that theory generating and testing are less frequent in many of the research approach to E-government research, but case studies and product descriptions were frequently adopted by E-government researchers . The definition of E-government by the World Bank provided a succinct summation that captured the central idea of what E-government represents from a generally accepted standpoint of significant numbers of E-government researchers. The World bank defined E-government as "the use by government Agencies of information technologies (such as Wide Area Networks, the Internet, and mobile computing) that can transform relations with citizens, businesses, and other arms of government" (The World Bank, 2015). Citing O'Reilly (2010), Lampe *et al.*, asserted that

"the aim of E-government is not merely to reinforce existing forms of interactions, but to create new forms of participation that improves relationships between the public and governments, to increase government efficiency, effectiveness and transparency" (2014, p.318). They further explained that to realise the inherent benefit of E-government, public administrators should emphasise designing quality systems that have the capability to make information not only accessible to the public, but a rewarding experience (Lampe *et al.*, 2014a).

A consensus to the definition of E-government can be summarised as efforts by governments to provide its constituents with the information and services required through use of wide range of information and communication technologies and the Internet (Cordella and Iannacci, 2010; Khalil, 2011; Nam, 2014). The socio-technical nature of E-government must be carefully considered within context if it is to be properly and correctly applied (Seifert, 2003) because the contextual nature of countries might cause E-government difficulties if not placed in the proper perspective (Heeks, 2002a; Schuppan, 2009). The complexities of the socio-technical nature of E-government challenges its ability to be used as means for public-sector transformation mechanism in many developing countries (Seifert 2003), though efforts could be made by governments to develop E-government capabilities in tandem with local content and the needs of their citizens. Recent E-government studies has shown that significant number of governments in African countries are not only leveraging on E-government to promote good governance, but also using it to strengthen relations among their citizens in spite of the socio-technical challenges of E-government paradigm (U.N, 2014; U.N, 2016; Verkijika & Wet, 2018).

Irrespective of the lack of a standard definition and theoretical framework, E-government offers great opportunities for governments in emerging economies not only to increase productivity in the public-sector services but to also to enhance efficiency in service delivery. While E-government comes with its own challenges – those of re-engineering of existing process, management responsibilities, and issues related to funding (Nkohkwo & Islam, 2013; Weerakkody *et al.*, 2016; Ojha & Pandey, 2017) – opportunities abound for emerging economies around the world to leverage on the promises that E-government holds.

2.1.2 E-government Theories and Concepts

Grönlund a leading critique of E-government research once said: “A scientific field is usually characterised by not just a common object of study, but also a set of theories which can be used to understand the general conditions of the field" (2004, p.178). He concluded that theory generating is not easily found in E-government research, while questionable assertions are common among E-government researchers. He recommended that more needs to be done in the areas of theoretical rigour and research quality if E-government is to be taken seriously as a research discipline.

Theories and Concepts about E-government as defined by Bailur and Heeks (2007) are mainly represented in literature in the following formats:

1. Framework-based research concept: The framework-based research studies mainly uses frameworks that are derived explicitly from bodies of theoretical works. These include frameworks of various perspective on regulations, derived from imported theories from the field of political science.
2. Model-based research concepts: The model-based research concept mainly uses models that are presented without references to other or previous framework of knowledge. A notable example is the four-part “web stage” model developed by Layne and Lee.
3. Schema-based E-government research concept: The Schema-based research concepts found in E-government literatures mostly make use of a schema of techniques for E-government research. Examples include the use of data architecture.
4. Concept-based E-government research: Concept-based E-government research mostly makes use of concepts such as ‘stovepipe government’ and ‘public-value-concepts’ to describe E-government.
5. Category-based E-government research: Category-based E-government research works are seen in literature to make use of various factors and features found on E-government Websites to describe the category or type of E-government that it is thought to represent.
6. Non-framework-based research: non-framework-based E-government research does not involve the use of any recognisable framework of knowledge. Non-framework-based E-government research are seen in literature to simply present

and explain some set of ideas and related data to describe E-government (Heeks and Bailur, 2007).

Scholars have pointed to methodological weaknesses in electronic government research (Heeks & Bailur, 2007) and its lack of theoretical rigour (Yildiz, 2007; Bannister and Connolly, 2015) as factors limiting E-government studies. Bannister and Connolly (2015) argued that theory provides rigour; and good theory can help explain and assist understanding of a phenomenon. They argued that good theories can be useful in predicting how given sets of primary condition would develop over time

2.2 E-GOVERNMENT BENCHMARKS

The concept of benchmarking is useful in evaluating and improving businesses (Rorissa *et al.,* 2011). Citing Watson (1993) and Camp (1989), Rorissa *et al.,* noted that the earliest known benchmarking activity was carried out at Xerox which eventually led the company to the adoption of new processes to help in reducing production cost and to improved performances of its business concerns (2011, p.335).

Similarly, E-government benchmarking is used to compare the E-government performances of two or more countries using a given set of indicators (U.N, 2002; Heeks, 2006) with a view for countries to learn and improve their E-government capabilities and develop best practices. E-government benchmarking methods increasingly gets complicated and hard to evaluate when it moves beyond the supply-side criteria to include calculated indices such as those used in online service index and human developmental index. When units of analysis of E-government gets complex, more tools are required. The higher the complexity of E-government design; the costlier and more complicated the processing and evaluating of the benchmark and performances. According to Janssenet *et al.,* (2004) cited in Rorissa *et al.,* (2011) many E-government benchmark studies have focused mainly on the supply-side and not the back-office indicators of E-government because of the higher cost of evaluating back-office components of E-government systems. Heeks (2006) identified two general purposes of benchmarking 1) an internal purpose and 2) an external purpose benchmarking which he claimed are useful for achieving some benefits for the users. He concluded that the primary targets of E-government benchmarking are E-government policymakers (Heeks, 2006).

2.2.1 Challenges in E-government measurement

Statistical information to measure E-government performances of individual nations is not easy to come find many emerging countries; especially those that do not have regularly updated national statistics. Difficulties often arise in the areas of statistical feasibility, data relevance, data collection costs, and issues relating to the burden on respondents (ONU, 2014). With statistical feasibility there is the problem of adequate methodological approach that is applicable to E-government measurement in local and international context (International Telecommunication Union, 2015b). Other challenges in E-government measurement are issues of comparable statistical units, structural differences in functions of government organisations across countries, and the identification and definition of government units across countries (ONU, 2014). To mitigate the problem of disparate E-government measurement indicators, policy frameworks for a unified set of core E-government indicator was proposed by the Task Group on E-government (TGEG), a body made up of leading world bodies on international development (ITU, 2011; ITU, 2015). Authorities with the responsibility of overseeing electronic government development in Nigeria may adapt standardised E-government indicators that have been developed and tested in other climes to the Nigerian context.

2.2.2 Set of E-government core indicators

E-government core indicators could be classified into four areas and summarised thus:

- Use of ICT by employees of government (for example, use of computers).
- Availability of ICT to government organisations (for example, the Internet).
- Use of ICT by government organisations (for example, whether a website exists), and
- Supply of E-government services to citizens (by publicly accessible websites).

The list is by no means exhaustive. E-government core indicators can be helpful in providing a starting point for authorities in Nigeria to measure their E-government efforts using internationally comparable indicators.

2.2.3 The United Nation's E-government development index (EGDI)

The EGDI is the United Nation's methodology to measure the E-government development index of its member state. The EGDI is an overall scoring of the capacities of national administrator's willingness to use online and mobile technology to deliver public-sector services to citizens (U.N, 2010). The EGDI framework comprises the Online Services Index (OSI), Telecommunication Infrastructure Index (TII), and the Human Capital Index (HCI). The EGDI is based on the comprehensive survey of the online presence of the 192-member countries of the United Nation Organisation. Mathematically the EGDI is represented as: **EGDI = (0.34 × OSI) + (0.33 × TII) + (0.33 × HCI).** The EGDI is not designed to capture E-government index of participating countries in an absolute manner. However, the index aims to fairly rate the performances of national governments through their online presence in comparison to each other.

2.3 E-GOVERNMENT FRAMEWORKS AND MATURITY MODELS

Electronic government is generally studied by observing models of its development stages (Yildiz, 2007). An E-government researcher can investigate a country's E-government level of participation by mapping the country's E-government development level to an internationally acceptable measurement framework to obtain a development index commonly referred to as the E-government development index (EGDI). Benchmarking performances against well-established models of E-government provides a basis for analysis and a platform to refine and extend newer models to suite the host environment. It must be noted that countries differ in their socioeconomic make-up and technological capabilities. Government priorities vary from country to country, and as such one would not expect to see every country adopt the same level of technology.

The adoption of E-government service paradigm is altering how governments go about their operational processes (Lee, 2010; Linders, 2012). The changes brought about by the adoption of E-government impacts overall government services across various functional units and level of government, thereby presenting richer and diverse organisational and administrative issues from administrative reforms to technological challenges (Lee, 2010). Issues arising from adoption of E-government system of governance must be addressed as electronic government develops and advances in both scope and capabilities. Refinement to E-government architecture should not be surprising as E-government research field is gradually establishing itself as a discipline. Being a new and fast

developing discipline, E-government research continues to attract all sorts of researchers from nearby disciplines who are importing ideas from their native domains to help develop and establish E-government as a discipline (Heeks and Bailur, 2007). Being relatively new, literature shows E-government research as a research field struggling to establish a well-articulated conceptual foundation.

2.3.1 West's E-government framework (2007)

In discussing E-government benchmarks, West (2007) proposed an E-government index designed to measure output of government online portals that aggregates the extent to which national websites provide executable services. The E-government framework designed by West is regarded as a robust framework because it accounted for both content and services it provides (Rorissa *et al.,* 2011). Many researchers use the methods proposed by West when computing E-government index. Many E-government researchers and practitioners often use West's E-government framework when computing the EGDI due to the objective set of procedures it uses in the computation and analysis of Website contents, and because its constructs are based on important government services (West, 2007).

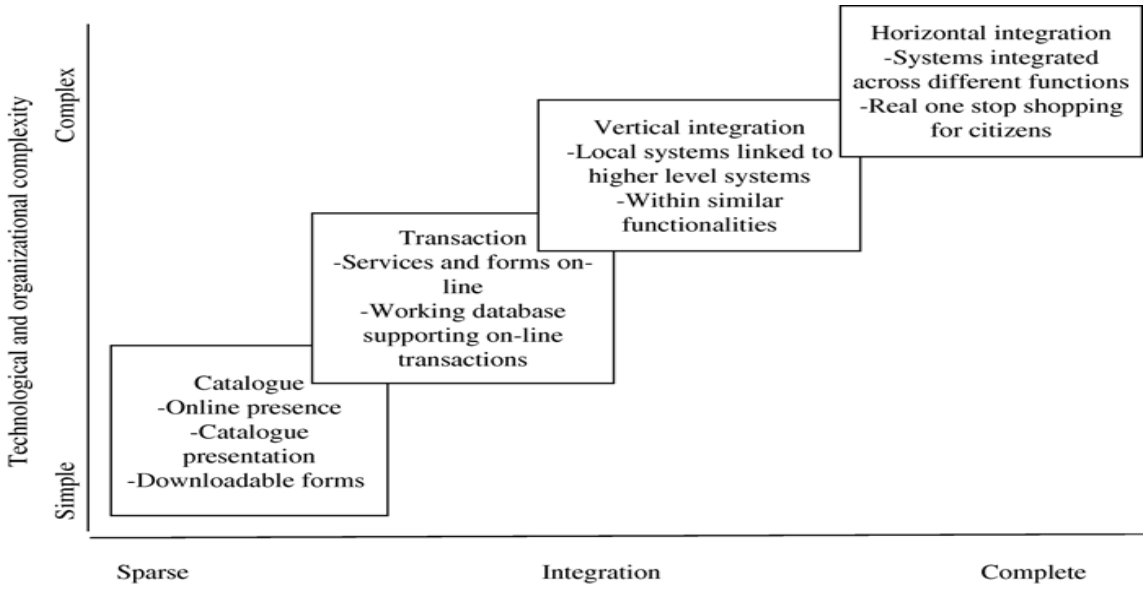
2.3.2 Layne and Lee Maturity Model (2001)

Layne and Lee were the first researcher to develop a universally recognisable E-government model in 2001. They presented an E-government model evolving through four stages of development namely: Cataloguing, Transactional, Vertical integration, and Horizontal integration. The maturity model presented by Layne and Lee shows that E-government stages of development and growth is contingent on the technological and organisational complexity (Layne & Lee, 2001). Stage one in the Layne and Lee model is termed 'Cataloguing'. At the cataloguing level, government websites mainly concern itself with publishing information only. At the 'Catalogue' stage, the public is limited to reading information on government websites without the ability to interact with the website. The second stage of development in their model is the 'Transactional' stage. At this level, some online transaction with government Agency is possible. The public can read and interact with databases on the website. Some level of business transaction is also possible. The third stage is referred to as 'Vertical Integration' state. At this level government integrates operation within functional areas of government by sharing

databases across Agency boundaries. The fourth stage is called ‘Horizontal Integration’. At this level government portals integrates services across different functions and services.

Layne and Lees’ maturity model laid the foundation for subsequent electronic government models. Layne and Lee's Maturity model is limited in scope and does not address wider issues of E-government implementation such as the role of organisational structure and cross-agency collaboration towards provision of a one-stop-shop government e-portal.

Figure 1: Layne and Lee Maturity Model.

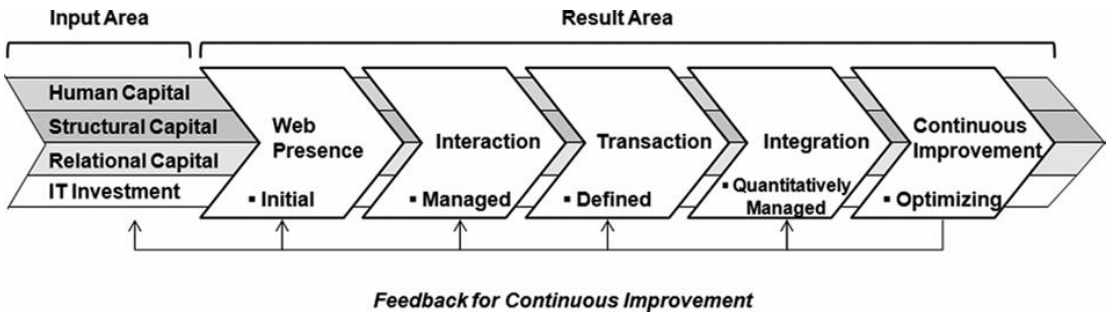


Source: Adapted from ‘Developing fully functional E-government: A four stage model’ Layne & Lee (2001).

2.3.3 The UN and ASPA Maturity Model (2002)

Building on the previous model designed by Layne and Lee (2001), a second model of E-government was developed by the United Nations and the American Society for Public Administration in 2002. Their E-government model comprised of five stages: 'Emerging', 'Enhanced', 'Interactive', 'Transactional', 'Seamless' (UN & ASPA, 2002). This model offers an improvement over the Layne and Lee model by adding the seamless or fully integrated dimension where governments use a single website as a one-stop-shop portal where users can conveniently access information and public services.

Figure 2: Diagrammatic presentation of the UN and ASPA Maturity Model

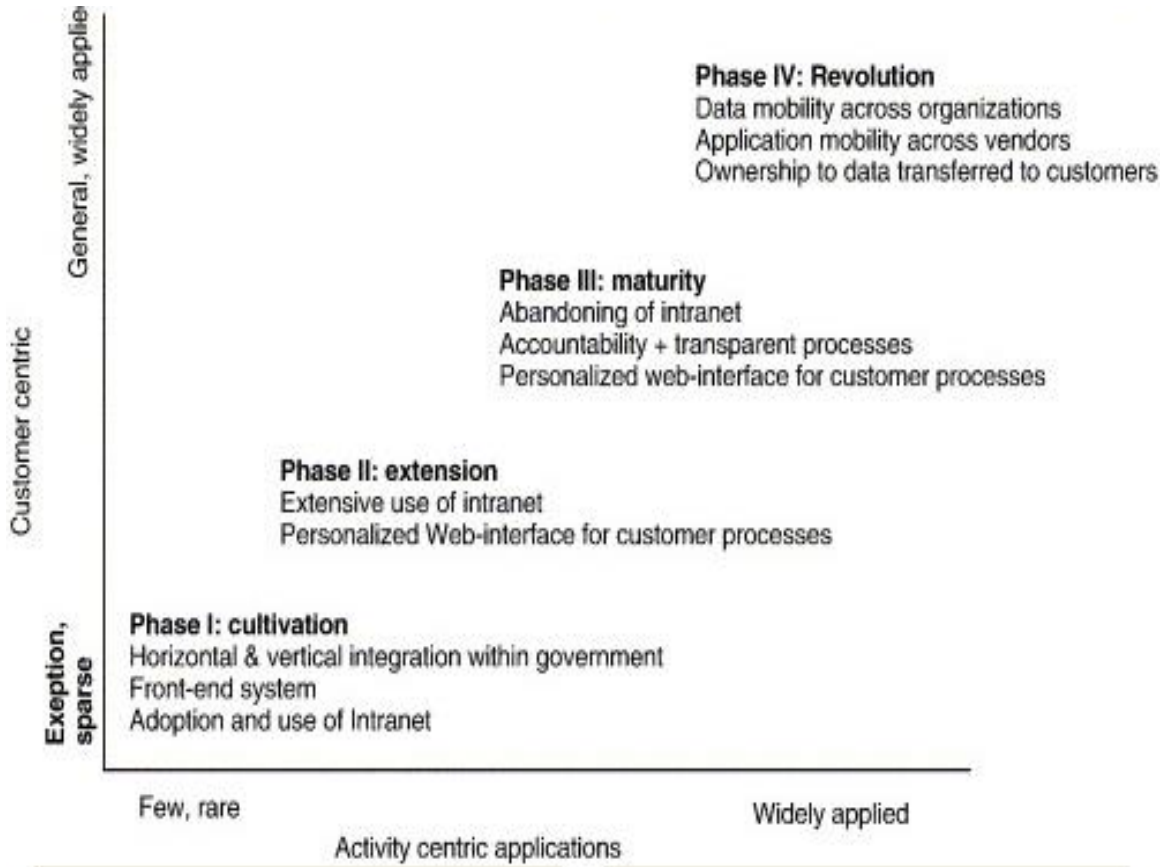


Adapted from: Benchmarking E-government: A Global Perspective (U.N and ASPA, 2002)

2.3.4 The Public-Sector Process Rebuilding (PPR) Maturity Model

In further refinement of the Layne and Lee Maturity model, Andersen and Henriksen (2006) proposed the is the Public-sector Process Rebuilding Maturity Model (PPR). The model suggests a reorientation of the E-government maturity models by proposing a Public-sector Process Rebuilding (PPR) maturity model with a focus on using Information Technology applications for improving the central activities of government functions and bringing end-users together with key Stakeholders for an enhanced E-government development (Andersen & Henriksen, 2006). The main differences between the Layne and Lee model and Public-sector Process Rebuilding (PPR) model is that a customer-centred approach is considered over technological capabilities in the PPR model.

Figure 3: The Public-sector Process Rebuilding Maturity Model

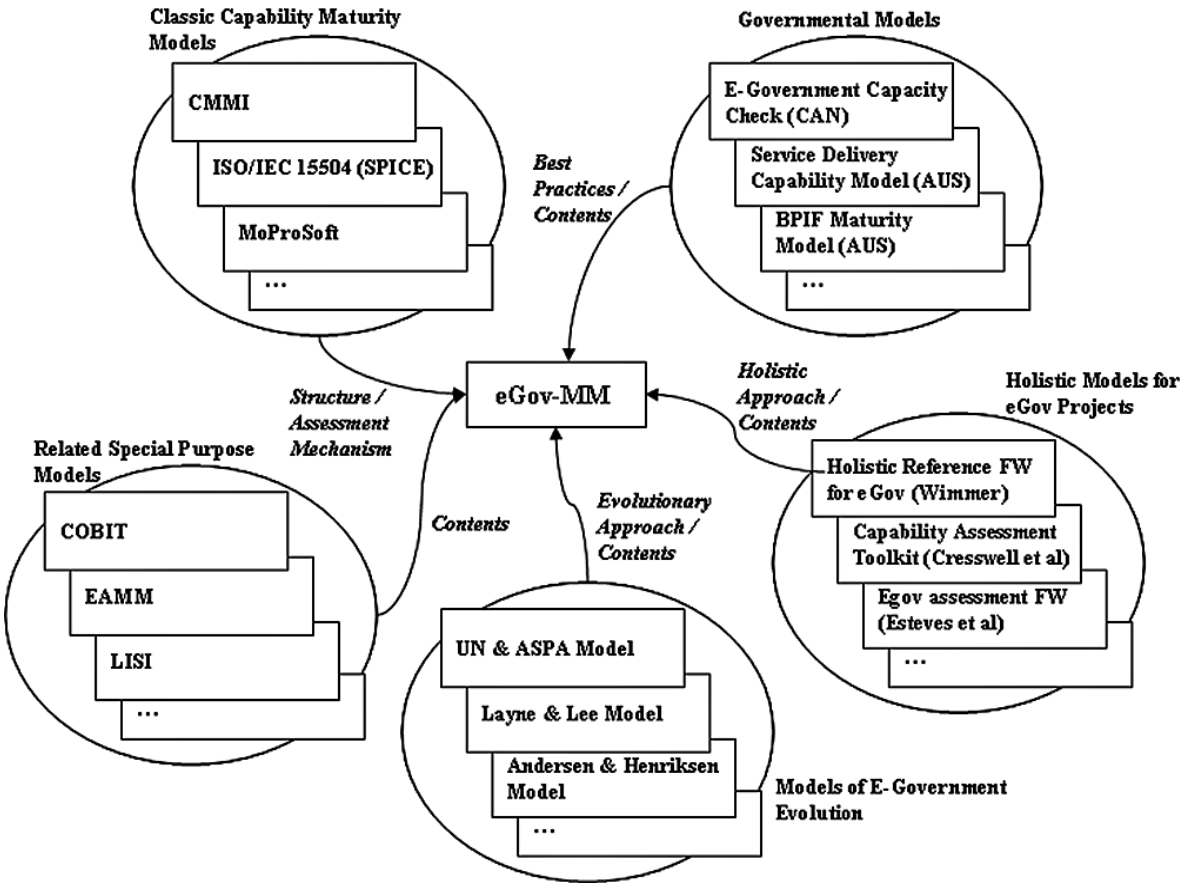


Source: Andersen & Henriksen (2006).

2.3.5 The E-government Maturity Model (eGOV-MM)

The E-government Maturity Model (eGOV-MM) model was developed by Valdes *et al.*, in 2011. The model integrated assessments of technological, organisational, operational, and human capital capability in a holistic and evolutionary approach towards E-government development framework (Valdes *et al.*, 2011). The e-GOV-MM model improved on the limitations of previous models and provided a flexible framework which can be adapted to suit many E-government development programmes both in developed and developing economies.

Figure 4: The eGOV-MM Maturity Model (Summary of contributions from international experiences to the model).



Source: Adapted from 'Conception, development and implementation of an E-government maturity model in public Agencies', G. Valdés *et al.*, (2011)

2.4 TYPES OF E-GOVERNMENT

E-government is multidimensional in nature and cuts across several public administration and Information system themes and sectors. Although E-government transverse a wide range of activities, it could be narrowed down to three main sectors: Government-to-Government (G2G), Government-to-Citizens (G2C), and Government-to-Businesses (G2B). Government-to-Government (G2G) is identified as the force propelling the development and implementation of government E-government services (Seifert, 2003). The G2G aspects of E-government focuses on activities of government institutions with government itself. It focuses on how various tiers of government interacts with their internal systems to enhance efficiency and how information are processed and shared

between government Agencies in a collaborative way. G2G is used by governments to manage public resources through restructuring programmes that focuses on using ICTs to create a leaner and agile public-sector that are cost effective and responds to citizens demands effectively and efficiently by adopting best practices from other private and public-sector organisations (Seifert, 2003) to local needs.

Government-to-Citizen (G2C) is designed to promote citizen interaction with government within the digital space (Alade *et al.*, 2014). The G2C dimension of E-government makes Internet-enabled transactions like payments of levies and taxes, renewal of driver's licenses and issuing electronic government certifications easier to achieve and less time consuming by using electronic modes of transaction that are accessible from any geographical location. G2C initiatives also enhances access to public information using technologically driven tools such as web-enabled computers, tablets, phones, and Internet kiosks. Many E-government advocates have suggested that one-stop-shop government portals where citizens engage the government to transact on a number of tasks that does not necessarily require physical contacts with government Agencies promotes G2G interactions and allows for more opportunities for citizens to benefit from government services than would have otherwise been very difficult to access due to geographical barriers (Seifert, 2003). The proliferation of the Internet and web-enabled digital devices would continue to improve the uptake of G2C thereby allowing many more people to benefit from government programmes and initiatives.

Government-to-Business (G2B) dimension of electronic government is designed to promote relationship between governments and businesses through online application systems (Seifert, 2003; Alade *et al.*,2014). G2B E-government dimension drives government's e-transactions programmes between governmental organisations and businesses that takes place in electronic marketplaces for government purchases. G2B E-government dimension allows online marketplace to be created and used for conducting government procurement using electronic means to exchange goods and services and to disseminate government information as it relates to transactions on commodities and services.

2.5 E-GOVERNMENT ARCHITECTURAL MODELS

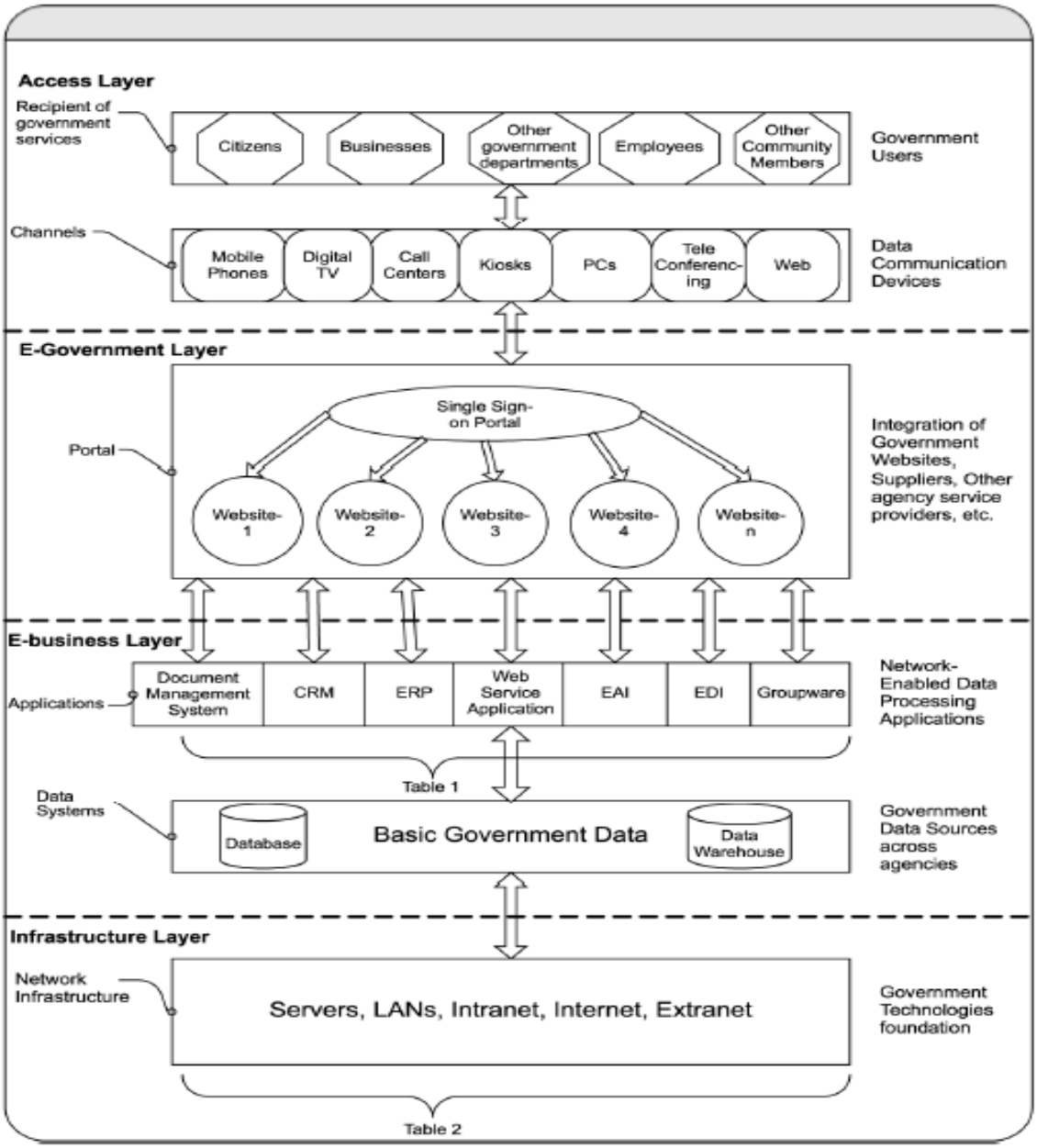
Architectural models of E-government are diagrammatic representations of patterns or designs it adopts and implements. E-government models are continuously developed and improved from previous models in responding to the changing needs of the society. As

public services demand from the citizens increases both in mode and sophistication, governments needs to respond with newer E-government architecture designs that addresses the growing needs of the citizens. Architectural models should be designed in a way to enable iterative and incremental development so that it can quickly be modified as the need arises. E-government models must be based on the 'open government data principle' which allows free and unfettered access to public data and information. Below are examples of known E-government architectural design that have been in use in different part of the world.

2.5.1 The E-government Architecture (Ebrahim and Irani, 2005)

According to Ebrahim and Irani (2005), E-government architectures define the standards, infrastructure components, applications, technologies, business model and guidelines for electronic commerce between organisations to facilitate interactions with government and promote productivity between government and organisations. Their E-government architectural framework is divided into four layers 1) Access layer, 2) E-government layer, 3) E-business layer, and 4) Infrastructure layer. The layers connect via two-directional arrows representing the hierarchy levels of E-government implementations. The arrows in the diagram shows the logical connections between layers that allows for a two-way transmission of data and service. The E-government Architecture proposed by Ebrahim and Irani seeks to integrate all government services across organisational boundary lines providing public services seamlessly and in real-time.

Figure 5: The E-government architectural framework.



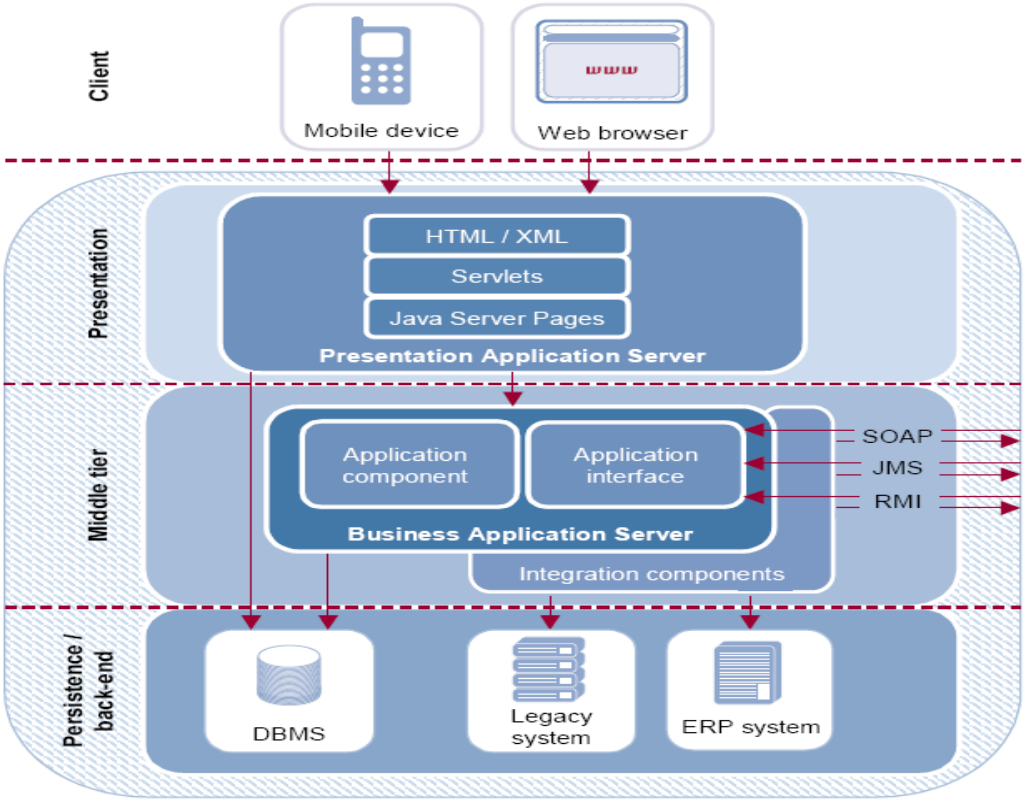
Source: E-government Adoption: Architecture and Barriers by Ebrahim and Irani (2005)

2.5.2 The Four-tier Architecture of E-government

The Four-tier architecture of E-government is a multi-layer model comprising of four distinct sections: 1) The client tier: the Client-tier architecture presents the end users with application interfaces where they can interact with software, 2) The presentation tier: the presentation-tier is used for the presentation of application data such as organisation Websites, 3) The middle tier: The Middle-tier is the most important section of the four-

tier model. It could be said to be the 'brain' of the model because it is responsible for the implementation of the application programming sequence and logic. The Middle-tier section also handles optional operations that can integrate external services through application interfaces, and 4) The Persistence/Back-end tier: the Persistence/Back-end tier is responsible for the storage of data objects within its database that can be queried to carry out desired operations. The Backend is a term that describes various operational functions of the operating system, specific databases, together with legacy or ERP systems. Each tier within the architecture allows for specific components to be assigned into its section. The four sections are interlinked to provide delivery of public e-services to the end users.

Figure 6: The Four-tier architectural model for E-government applications



Source: Adapted from Federal Ministry of the Interior Berlin Germany (2003).

2.5.3 Whole of Government (WoG) and the One-stop-shop E-government service Architecture

The Whole-of-Government (WoG) framework is a government service-wide E-government architecture that offers the public various services from different public

organisations coupled together as a single-service delivery unit in an online government portal. For E-government service users the WoG architecture makes interacting with public administration and receiving public services easier to achieve. A useful and integrated approach to delivering public services depends on factors such as (i) using similar organisational platforms with similar technologies to ensure back-office integration processes run smoothly in a coordinated manner (ii) robust interoperability which means that organisation systems are compatible and work seamlessly with other systems, and (iii) the use of infrastructure that supports electronic signatures and identity cards. Literature described experiences of many countries that has successfully implemented a whole-of-government one-stop-shop E-government service (Christensen & Lægreid, 2006; Janowski *et. al.*, 2012; U.N, 2014; U.N, 2016; Zuiderwijk *et. al*., 2014; Juell-Skielse *et. al.*, 2017). The low-level functionality of WoG in many emerging countries can be attributed to local and contextual factors. Improvements to WoG though challenging, continues to be that of integrated approaches to public-sector service delivery that are effective and sustainable. Available data from the OECD shows that interoperability challenges are issues that many countries are still trying to tackle (OECD, 2012). The United Nation's E-government Survey report mentioned Nigeria as one of the countries where government efforts are been made to provide online gateways to regional governments through portal linkages (U.N, 2012). Portal linkage is an avenue to encourage interoperability among various e-service channels. The 2016 United Nations E-government Survey offered insight into the extent of E-participation by member states. The Survey provides indicators to measure interoperability and the degree to which countries are implementing the whole-of-government system as an innovative way to strengthen public-sector service delivery mechanism. These indicators relate to E-government platforms with features that allows different E-government systems to exchange information by allowing the users to monitor and check the status of online transactions (U.N, 2012).

While it may be true that not all countries have been able to successfully deploy interoperability ICT systems within government functions, the U.N. E-government surveys has continued to encourage governments to build websites to link up national websites and organisational portals and to collaborate across organisation boundary lines towards a whole-of-government online service delivery system of governance (U.N, 2012; Undesa, 2016).

2.6 SERVICE QUALITY (SERVQUAL)

Throughout human history, humans have always relied on other people for services in one way or the other. Forms of services provided vary from traditional well-known day-to-day commercial services carried manually to the highly sophisticated modern e-services based on ICTs. Parasuraman *et. al.,* (1985) observed that when consumers purchase goods in the traditional way, he often examines what was purchased in terms of its physical attributes and characteristics. In a similar vein, when we purchase online services, we expect goods and services to come with certain valuable characteristics or attributes. When individuals go to organisations for the provision of services, whether the interactions follow the traditional or electronic format, there is the need to examine and evaluate the quality of interactions between service providers and customers on regular and consistent basis. The regular evaluations of such services are vital if a right level of service quality is to be determined and maintained.

The proliferation of web-enabled electronic devices has facilitated and continue to encourage customers to expect to receive quality public services not only in traditional forms of service provisions but also in their online quality dimension. To maintain acceptable levels of online service delivery, the qualities of public e-services need to be monitored continually by the authorities responsible for such services so as to develop strategies that would improve services being offered online so that customers will enjoy increased level of satisfaction from goods and services sourced online (Sá, Rocha & Pérez Cota, 2016).

Hien (2014), noted that service quality is the measure of the extent to which services provided correspond or measures up to the expectations of clients. Therefore, the qualities perceived in services are determinant factors for success in commercial activities (Connolly, 2007). Lee and Kim (2014) observed that the ability to quantify service qualities is necessary to achieving high-quality of service provision. Parasuraman *et. al.*, (1988) created the SERVQUAL model to measure service-quality perception derived from the gap between consumer expectations and the performance of the service that is delivered.

Rowley (2006) undertook an analysis of the features contributing to E-service quality and provided a summary list of online service portals which included items such as:

communication features, information, reliability, delivery, customer support, responsiveness, accessibility, security, and personalisation. In the context of E-government and its adoption Carter and Belanger (2005) discussed Technology acceptance model (TAM) and Diffusion of Information (DoI) useful to E-government development. They reported important E-government factors such: perceived ease of use, compatibility, and trustworthiness as very important elements that are necessary for the development and implementation of effective E-government systems. Van Dijk *et al.*, (2008) observed that there is insufficient investigation into the demand-side of e-services on the part of public in comparison to the multiple classifications and benchmark lists that have been seen in literature to describe the E-government supply-side. It must be noted that effective E-government systems must be citizen-centred and jointly developed by all E-government Stakeholders.

2.6.1 E-GOVERNMENT SERVICE QUALITY (e-GovQual)

Papadomichelaki and Mentzas contextualised e-GovQual in 2009 as an E-government service quality model developed to measure qualities of online E-government services. Following an extensive review of literatures related to service qualities, additional service quality dimensions were defined and added to the initial model. The additional constructs added are: 1) Ease of use, 2) Trust, 3) Functionality of the interaction environment, 4) Reliability, 5) Appearance of information, and 6) Citizen Support (Li & Suomi, 2009; Alanezi *et. al*., 2010). Papadomichelaki and Mentzas (2009) stated that E-government online servqual dimensions should consider web-portal layout to include characteristics such: suitable colours, correct graphics and a good font size for the website. Alanezi *et. al*., (2010) suggested an E-government measurement scale comprising seven dimensions like the SERVQUAL model of Parasuraman *et. al.,* (2005). The servqual dimensions of Alanezi *et al*., included 1) Website design: Website design focuses on appearance together with the functionalities of E-government websites, 2) Responsiveness: the responsiveness of websites checks to see whether the services that were delivered were timely and beneficial to the recipients. 3) Reliability: the reliability dimension examines the satisfaction the user experienced from timely delivery of E-government service. 4) Security: security aspects examine level and quality of user data protections that the government website offered to online users. 5) Information: this refers to online information obtained through E-government services. The information should be current, accurate and easily read and understood, 6) Ease of use requires that government's

websites should be user-friendly to give users some level of satisfaction. 7) Customization: customisation is about government online portals willingness and ability to allow users some level of individualised attention that would increase their level of satisfaction with government online portals. In this service quality model, the service quality is referred to as empathy.

Li and Suomi (2009) referred to the service quality dimension as the feeling online users experience of being safe and free from risks or dangers associated with online services.

2.6.2 e-GSQA FRAMEWORK

Zaidi and Qteishat (2012) conceptualised and developed an e-GSQA framework to analyse and determine the quality of services from the user experience. The author of e-GSQA framework assumed that e-Commerce and E-government are similar in practise to the extent that service delivery channels are the same - online. Zaidi and Qteishat e-GSQA framework is a refined service quality framework which was developed by combining the E-S-Qual (Parasuraman *et al.*, 2005) and e-GovQual (Papadomichelaki & Mentzas, 2009) models. Zaidi and Qteishat adapted and validated servqual dimensions with constructs such as: 1) Website Quality, 2) Design and ease of use, 3) Reliability, 4) Responsiveness, 5) Security, 6) Privacy, 7) Efficiency, 8) Use Confidence.

Hien (2014) after examining several E-government service quality dimensions in several studies concluded most of the Servqual dimensions were assumed qualities of services and qualities of online information. Hien offered a newer version of servqual by focusing on the internal processes of organisations he called "quality organisation perspective”.

From Hien's perspective the term "organisation" refers to management’s action used to manage the organisation’s activities. His study focused on 1) E-government information and services improvements by using ICTs to encourage the public participation in governance. When the public is involved in decision-making process in governance, government action is seen as more effective, transparent and responsible, 2) Chief Information Officers (CIOs). Hien argued that CIOs play key roles in the quality of services an organisation offers to the public. Hein’s servqual model included eight quality-dimensions classified according to the Quality of information, Quality of organisation, and Quality of services.

2.7 ICT AND THE DEVELOPMENT OF E-GOVERNMENT

2.7.1 The Digital divide

Equitable access to information is an important aspect to an emerging global information economy. Sub-Sahara Africa epitomises the dilemma that exist between the information "haves" and "have-nots" (Gebremichael & Jackson, 2006). In discussing the causes and wider implication of the digital divide, it is vital to situate arguments in the proper context because there is no singular definition for the phrase 'digital divide'. The idea of a digital divide between the "information-rich" and the "information-poor" is widely believed to have originated from discussions on information policies in the United States at the turn of the century and has extensively debated the need for equitable access by every individual to electronic resources such as personal computers and access to the Internet (Gebremichael & Jackson, 2006). Gebremichael and Jackson defined digital divide as "inequalities in access to the Internet, extent of use, knowledge of search strategies, quality of technical connections and social support, ability to evaluate the quality of information, and diversity of uses" (2006, p.268). Their definition of digital divide encompassed many other factors that digital divide researchers and scholars have mentioned in Information System research. Another definition of digital divide refers to the existing gaps between individuals and businesses at various level regarding opportunities to access the Internet for online activities (ITU, 2013). The digital divide is an integral part of the broader Information Poverty debate (Gebremichael and Jackson, 2006; Diga *et. al.,* 2013b) which derives mainly from the lack of access by a considerable proportion of the global population to ICTs and related infrastructures. Bridging the digital divide requires a multi-dimensional approach that includes co-operation between regional and international bodies in the areas of finance and technical assistance from countries with advance technological knowhow (U.N, 2016). In addition to technical and financial issues, capacity building - both in government and enterprise levels - must be encouraged and pursued by governments in developing economies. Policy setting that includes citizen engagement in ICT usage should be promoted in addition to creating an enabling environment for learning and skills development that would enable greater public participation in government to improve quality of governance through timely access to public services and information.

Timely access to information is important and should be seen as the catalyst required for an accelerated E-government development and implementation programme. Countries

aspiring to build strong citizen participation in the process of governance should encourage citizen access to timely information using ICTs and the Internet. Dimensions of digital divide discussed in extant literatures includes using ICTs to provide accessible online services to the citizens, raising awareness for citizens on the benefits and use of ICTs to access information, opportunities to educate the citizens on importance of timely access to information, access to skills and materials necessary to access online services, the provision of online content that are accessible for use by the public, motivation by governmental authorities that encourages citizens to use ICTs and the Internet to access online information and services, ensuring that

structural, political, and governance factors should not hinder access to, and benefits of ICTs,

and the willingness on those in authority to address cultural and social issues that tend to discourage the use of ICTs and Internet by the people especially those that are illiterate with limited access to formal education.

Table 3: Dimensions of the digital divide in developing countries.

SOME DIMENSIONS OF DIGITAL DIVIDE	
Service Availability	The use of ICTs to provide accessible services to all Stakeholders.
Awareness Source:	Raising awareness for everyone about the benefits of using ICTs.
Learning opportunities	Providing people with the opportunities and facilities to learn and develop new ICT skills.
Skills	Possessing necessary ICT skills to carry out computer-related activities.
Support	Having adequate access to the materials and expertise for the use of ICTs

Motivation	Inspiring everyone to have full access to ICTs and reach out for the benefits of doing so.
Content	Providing adequate content for everyone to access and use ICTs and related technologies
Cultural	Cultural issues concerning norms, values, and routines are essential and should be considered alongside other ICT issues
Empowerment of civil society	Structural, political, and governance factors should not hinder access to, and benefits of ICTs.

Source: Adapted from 'ICT for Poverty Alleviation Framework'. Rogers (2002)

2.7.2 Information Technology and social change

The use of ICTs for transformational relationship between governments and citizen (G2C) is significant and fundamental to the way government interact with the public to deliver e-services effectively and efficiently (Oyeniran *et al.*, 2014). ICT tools are increasing being used by governments to re-develop public-sector services by modifying government's working processes to involve the citizens in an adaptive and inclusive manner (Ndou, 2004). Government's use of innovative communication technologies within public-sector organisations and how it deals with the public can result in societal changes – a situation where citizens in a given society adopts newer ways of interactions with government with a view to co-create public services that delivers co-created value products using technology to achieve such transformation. The 'social change' in this study refers to the modification in the fundamental ways that governments interact with its citizens facilitated by web-enabled ICTs and the benefits accrued to both the government and the citizens through such process.

There is no doubt that nowadays Information and Communication Technologies are an integral part of our daily lives with significant influences on how we interact with other peoples, businesses, and governments. Modern developments in ICTs and the Internet-

enabled communications systems and Networks have offered opportunities for growth and innovation in virtually every aspect of society's economic and social developments (U.N, 2008, 2010, 2014; Millard, 2013; Luna-Reyes & Gil-Garcia, 2014). Advances in Information Technology greatly improves the flowing of digital information which in effect strengthens societal institutions which are essential for a democratic society (Joy *et al.*, 1999). The Internet usage and its associated web-enabled technologies, Network connectivity, database technologies, hardware and software equipment all combine and contribute to make E-government workable and to reduce the digital divide between nations (Ford, 2007; Fuchs & Horak, 2008). Technological infrastructures are essential to the smooth running of E-government systems, but not sufficient on its own (Fountain, 2006). Without the concerted effort by all Stakeholders of E-government, the collaborative efforts between public institutions, and the cooperation of the private-sector and the citizens, E-governance programmes will most likely fail (Ansell & Gash, 2008). There is an urgent need in developing countries to improve their information infrastructures of interconnected Networks of computers, devices, and software so that they are not left further behind in the global information society (Ford, 2007; Fuchs & Horak, 2008). To achieve the goal of developing suitable information infrastructures necessary for E-government development, significant efforts by governments must be geared towards improving the citizen's basic knowledge in skills acquisition such as reading, writing, and information technology literacy programmes. The drive towards achieving a truly 'information society' is a two-way journey; on one hand, the government must provide an enabling environment to ensure that it's services are readily and easily accessible to the public regardless of their physical locations, computer literacy and socioeconomic status; and on the other hand, citizens themselves should demonstrate adequate desire and readiness to embrace and utilize information communication systems to interact with government and businesses operating in virtual environments. Governments should encourage public-sector institutions to development the utilisation of digital capacities that not only promotes effectiveness and efficiency in service delivery, but also reduces corruption and promotes accountability and transparency in governance.

2.7.3 ICT-Led Virtual Organisations

The use of Information Technologies in government organisations has been around for more than 40 years in developing countries (Heeks, 2001b). IT systems allow the internal

workings of government to be carried out quicker through automotive processes. Information Communication Technologies (ICTs) and similar systems are improvements over IT systems through support and transformation of the external working of governments. ICTs facilitates the processing and communication of data in faster and more effective ways (Lee, 2010; Nam, 2014). The changes in how data and information processes are used in public administration services have led to demands for open government initiatives (Luna-Reyes *et al.*, 2014). Open government initiative is a model of governance which promotes and supports initiatives towards Network building and external collaboration between governments and its Agencies towards open data sharing for effective public-service delivery (Valdés *et al*., 2011; Arduini *et al*., 2013). The growing digitalisation of information encourages the need to embrace and nurture virtual organisations built on ICTs and web-enabled infrastructures. Kosiur (2003) cited in Al Bakr defined a virtual organisation as "any organisation which is continually evolving, redefining, reinventing itself for practical business purposes and unrestricted to a geographical physicality" (2009, p.50). Kosiur narrated that virtual organisations could take the form of an entity comprising of workers who are geographically dispersed but share their work and communicate mainly through electronic mediums with minimal face-to-face contact. Kosiur (2003) further explained that virtual organisations are characterised mainly by the development of dynamic communication techniques and the creation of an organisational culture that is adaptable to continual changes and enabling individuals to optimise their potentials towards contributing to the changing forms and shapes driven by newer technologies. Virtual organisations formulate strategies for success rather than survival. It exploits technology, empowers people throughout the organisation by developing their entrepreneurial skills and sets essential goals while helping workers to take risks and manage ambiguities (Al Bakr, 2009). Newer government models and good governance structures can be patterned on virtual organisations driven by ICTs and the Internet. Virtual organisations encourage efficiency, promotes transparency and accountability, encourages inclusive citizen participation and offers opportunities to compete globally in an increasingly growing knowledge society. E-governance paradigm could essentially be called a virtual government.

2.7.4 The Knowledge Society and Knowledge-based Economy

Knowledge management is a focal point of an emerging phenomenon in today's technology-driven global society. Economic and social empowerment is increasingly

made possible due to the ability to safely access, analyse and use information to obtain the various kinds of knowledge required for the various social, cultural, political, and economic choices and options available in a society that is awash in large quantum numbers and varieties of data at increasingly high speed. This sort of data is referred to in literature as 'Big data'.

The Knowledge Society according to Rincon (2005) cited in Al Bakr, (2009) pointed out that the concept of a knowledge society often refers to an advanced or well-developed State or society. Moreno-Jimenez, (2003a) cited in Moreno-Jimenez et al., is of the view that the knowledge society can be explained or understood as a "framework that accommodates the creativity, imagination, ingenuity and talent of human beings based on the development of information and communication technologies" (2014, p.185). He further explained three characteristics of the Knowledge Society that must be utilised in the conjoint creation of a better society vis-à-vis: i) deterritorialization; (ii) the interconnection between the actors and the interdependence of the actors; and (iii) the relevance of the individual (human factor). Deterritorialization or the elimination of geographical constraints refers to the absence of a physical space in which the actors involved in the resolution of conflicts are located. Interconnection reflects the possible communication between the actors and facilitated by ICT tools. Interdependence can be viewed as the frame of reference - a holistic vision of society - within which the factors considered in the problem are interrelated (Moreno-Jiménez *et al.*, 2014). Governments world over are increasingly becoming aware of the knowledge society and the its role as it relates to national development (U.N., 2004; Al-Hujran *et al.*, 2015; Sarrayrih & Sriram, 2015). Governments are recognising the influence of technologies on the educated population in a rapidly changing digital world. To this end, governments are continually seeking innovative applications made possible through the use of ICTs to proffer solutions to hitherto intractable problems (U.N., 2004; Yildiz, 2007). Governments continue to find economic and institutional frameworks that are innovative in repositioning development programmes and strategies to achieve a knowledge-based economy (U.N., 2004) as part of an overall E-government strategy.

Inter-organisational knowledge sharing is a complex issue built on inter-organisational relationships. Inter-organisational knowledge sharing is a critical factor for collaborative resource coordination, allocation and integration across multiple members of a supply chain in delivering value-added products that can serve as strategic means to greater

competitive advantage when leveraged across a host of market opportunities (Chen *et al.*, 2014). There is an assumption by Chen *et al*., that the processes of how insights are gained in knowledge sharing in a supply chain production environment and its benefits could be adapted and used in developing a governance model that leverages on the power of collaborative resource sharing through easy data and information access for every stakeholder in government. Such collaboration in resource sharing among governmental Departments can be viewed as positive efforts toward building of an E-government paradigm.

A knowledge society is an informed society where equality and development are based on the collective efforts of the people to take advantage of the innovative nature of ICTs. Innovative use of ICTs provides opportunities across a range of economic activities and public-sector e-services to improve easy access to information and knowledge facilitated by the Internet and the growing capabilities of the Internet of Things (IoTs).

2.7.5 The Internet Revolution

The Internet has revolutionised the way we use the computer to communicate in a manner that has never been seen throughout human existence. The invention of cables, telegraph, mobile telephones, and computers are fundamental to communication Networking capabilities that set the stage for the present-day mechanisms for data and information broadcasting (Leiner *et al.*, 2012) The worldwide broadcasting capabilities of interconnected devices provide the means for modern-day interaction between peoples and machines irrespective of their physical or geographical locations. Without the advent of the Internet, E-government would simply not have existed.

2.7.6 The Internet of Things (IoTs)

As Internet capabilities continue to grow in sophistication and form, ubiquitous sensing made possible by pervasive wireless technologies are being deployed across a variety of objects and throughout aspects of present-day activities (Gubbi *et al.*, 2013). The proliferation of web-enabled devices in communication-actuating Networks taken holistically creates what is known as the Internet of Thing (IoTs) - a situation where Radio Frequency Identification (RFID), Mobile phones, sensors and actuators all combine seamlessly within an environment and interact with each other to develop a common operating picture (COP) (Atzori *et al.*, 2010). This process often leads to generation of

massive data which can be stored and processed seamlessly in a way that meaningful inferences or analysis can then be made from the data (Gubbi *et al.*, 2013) using Big Data Analytics and related Data Science techniques.

There are several applications domains for the IoTs depending on the type of Network availability, coverage, scale, user involvement and impact which can be summarised into four significant areas: (1) Enterprise or Business, (2) Home or Personal, (3) Mobiles, and (4) Utilities (Gubbi *et al.*, 2013). The process of analysing the enormous amount of data using computer algorithms to reveal specific patterns or trends most especially as it relates to human behaviour and interactions has given rise to concepts associated with data sciences such as Big Data and Big Data Analytics. Advances in computer technologies and data science has made the process of acquiring and interpreting huge government data less cumbersome. The increasing demand for access to government data has led the public to call for greater transparency in government and for governments to open up their data to public scrutiny (Harrison & Sayogo, 2014).

2.7.7 Open Government and Open Government Data (OGD)

Distrust in governments as a result of regular failures to live up to their promises of a better life for the electorates has led to unprecedented demands for governments to lend its activities to more scrutiny by the public (Harrison & Sayogo, 2014). Increasing demands for transparency in government has been described by Birkinshaw as a possible solution "for the deficiencies and operations of government where government claims to be democratic but where it falls short of its rhetoric" (2006, p.48). The right to information emanates from the right to expression that stems freely from ideas, opinions and thoughts. For individuals to articulate their ideas they need to be well-informed (Yannoukakou & Araka, 2014). Calls to "open up" governments through transparency and participation by the citizens in the process of governance, and the need for accountability echoes globally as efforts are being made to ensure that government processes result in services and products that are accessible and recognised by citizens as being valuable and derived from democratic principles and practise (Harrison and Sayogo, 2014). 'Open government' can be described as hallmarks of good governance. To strengthen and promote democracies around the world and to encourage collaboration in government, the former president of the U.S. (Barack Obama) launched the "open government" initiative of the U.S. federal bureaucracy, while in 2011 the U.S. State Department launched the Open Government

Partnership (Harrison & Sayogo, 2014; Veljković, Bogdanović-Dinić and Stoimenov, 2014). Through fiscal transparency citizens can access information relating to budgets, audits, and related activities of government. With an 'open government' initiative the public can demand improvement in services, evaluate government performances, and hold governments accountable for their actions or inactions (Heald, 2012). Improvements in public institutions transparency and accountability can be achieved by encouraging governments to "open-up" their data to gain their citizens trust. Innovative demand-driven approaches are also partly responsible for the citizens demanding that their government continue to open their data to scrutiny by the citizens.

Open Government Data (OGD) often refers to "government information proactively disclosed and made available online for everyone's access, reuse and redistribution without restriction" (U.N., 2014, p.163). OGD initiatives differ across governments and across the globe in quantity and quality of datasets, and in how they are processed and presented together with tools provided to facilitate their use (U.N, 2016). Challenges to OGD are not limited to the questions of whether the governments should be forthcoming in opening up their data, but also include "issues related to legal frameworks, policies and principles, data management and protection, identity management and privacy, cybersecurity" (U.N., 2016, p.3). When taken holistically and applied to governance, Open Government Data can be used to alleviate poverty among the poorest regions of the world by allowing all Stakeholders to access and analyse critical data related to service provisions and through use of advanced analytical tools can target the most vulnerable people in the society with limited social and economic resources. The United Nations in its drive towards Sustainable Development Goals (SDG) agenda has continued to encourage the publication of 'open data' online and stated that "open data online can help to ensure higher degrees of accountability and transparency not only of national governments, but also of parliaments and of the judiciary" (U.N., 2016, p.3).

2.7.8 Connected Governance

In moving from E-government's ICT and related infrastructures to issues of integration and transformation, a comprehensive and far-reaching framework of connected governance is necessary. Such framework is in recognition that increasing number of public-sector services are delivered through online platforms and across multiple delivery channels which in turn require sophisticated technologies to effectively implement and

operate. To engage the public in a meaningful way, governments are increasingly recognising the Network capabilities of E-government as enablers and drivers for internal transformation of the public-sector organisations and a means for public interaction and participation in governance (U.N, 2008). To take advantage of the opportunities that modern technologies and the Internet offers for engaging the citizens, governments should continue to prioritise and improve ICTs and its related infrastructure to meet the needs and demands of a fast-changing information society. To exploit the various opportunities made possible through ICTs require collaboration on the part of all Stakeholders if progress is to be made in achieving a systemic transformation in the society that are both individual and institutional. E-governance is not just about changes to technological infrastructures but must include changes alongside individual ways of thinking and working including organisational culture changes that reflects the willingness to embed ICTs in public-sector organisations.

The concepts behind connected governance stems from the whole-of-government (WoG) efforts in finding ways through the use of technology as strategic tools and enablers for productivity and development in the public-sector institutions (U.N, 2008). The phenomenon of connected government in addition to development of strategies for an interoperability framework that encompasses policies and technical initiatives that supports and promotes Networking of government institutions should include collective actions that advances public good by creatively engaging the citizens using ICTs as tools for interaction. Connected governance allows for smoother data flow and information dissemination from governmental institutions and Agencies to both businesses and citizens in an organised, synchronised and seamless manner. Mechanisms of connected government promotes open consultations and feedbacks thereby encouraging a sense of participation from the public in government activities. ICTs and the Internet are enabling newer forms of transactions – e-Transactions - through government online gateways and portals that are otherwise not seen before. Increasing government migration of its functions from traditional brick and mortar facilities to online virtual spaces has the potential to collapse bureaucratic barriers which are often seen as bottlenecks to smooth interaction between government and the citizens. ICTs powered by the Internet makes government more accessible through online dialogue forums which offers real-time communication capabilities. Every effort at achieving connected governance aggregates to driving down the cost of running public services and at the same time promoting accountability within governments. The overall results of connected governance are

leaner and efficient public-sector with improved capacity to deliver public-sector services in a timely and cost-effective way (U.N, 2008).

2.7.9 Citizen-centric e-governance

The Networked capabilities of modern ubiquitous ICTs and the expanding Internet of things (IoTs) combines to deliver a system of integrated citizen-centric information service (Chen, 2010). For government to achieve a system that delivers an integrated information service, E-government Stakeholders must be committed to innovative and transformative public-sector reforms through ICT integration across government Agencies, Departments, and including organisational sectors (Yang, *et al.*, 2012). For E-government to function as intended, government have the responsibility to connect various Departmental units across organisational boundary lines to increase both the efficiency and effectiveness of the public-sector services it intends to provide to the public. According to Chen "a citizen-centric view of E-government requires the integration of various existing and new information systems that reside in various Departments. Horizontal process integration across Departments of local governments is required to provide a citizen-centric view when information is traditionally organised along Departmental lines" (2010, p.429). User-centred approach services must be considered as integral part of government's e-strategy initiatives. Enquiry and feedbacks from public service-user experiences should be encouraged due to the fast-changing nature of today's information-driven society (Verdegem and Verleye, 2009) to improve the quality of online services. Van Dijk *et al.*, (2008) cited in (Verdegem & Verleye, 2009) posited that more attention should be given to the needs of the public, their perception and experiences toward technology and its usage when considering a citizen-centric approach necessary for successful E-government projects.

E-service users are many and vary in nature and needs (Bertot & Jaeger, 2006), with different user and groups having their preferences towards services and service-delivery channels. These differences in the society should be considered when developing and implementing E-government public-service systems. Although catering to various service needs using online channels may be daunting Chen opined that "commitment to citizen-centric services is particularly relevant as governments wish to move to the next level of integrated E-government services" (2010, p.438). To develop an E-government strategy, the Nigerian government should engage the public using various forms of communication

platforms, leveraging on the growing social media to connect with their citizens and encourage them to participate in government activities with a view to solving societal problems. Governments could take advantage of the growing crowdsourcing concept and the Internet to connect and engage the public in various activities of governance.

2.7.10 Crowdsourcing

Crowdsourcing refers to the mobilisation of the general public - The Crowd - to perform what are usually small, incremental tasks that when taken together can result in the accomplishment of significant goals (Bailard &Livingston, 2014). Crowdsourcing thrives on the willingness and capabilities of the general public to participate in discussing issues that are of concern to the general public such as crime prevention, policing and voting. Crowd-sourced data using mobile telephony can be paired with the data management and visualisation capability of Geographic Information System (GIS) to create digital maps. Public-generated reports of specific occurrences or observations contributed by members of the crowd via their mobile telephones or computers could be collected, analyzed and displayed in the form of digital maps (Bailard & Livingston, 2014). The growing popularity and usage of social Network websites in recent years have led to higher number of individuals taking part in online discussion forums (Kushin & Kitchener, 2009). While the Internet's potential to mobilise and encourage online discussions such as those seen in ReclaimNaija and Occupy Wall Street, the quality of such public discussions on social Network websites remains a question (Wang &Wang, 2012).

2.8 E-GOVERNMENT IMPLEMENTATION AND BENEFITS

The benefits of developing and implementing E-government applications within the public-sector organisations includes efficiency of service delivery, effectiveness of public administrations and improvements in the qualities of data and information that are shared with other public Agencies, business and the citizens within a specific geographical location (Andersen & Henriksen, 2006). Before governments can embark on designs and development of an E-government service it must first understand the needs of the intended users. Government must have a workable knowledge of the way individuals and groups seek and acquire information on issues that interest them. Government must solicit expertise on the subject matter in the community and use of such information to develop services that can benefit the citizens (Bertot & Jaeger, 2006). Knowledge of matters of public interests helps governments to know precisely how to source and use information;

as well as their methods of inquiry. Government should also be concerned about how information is to be used by those seeking it and for what specific problems the users intend to solve with the information they have gathered. This sort of knowledge will go a long way in ensuring that the government's E-strategies are people-oriented and that E-government projects incorporate findings at the design level. A well thought-out plan for user-centred E-government services should at least include the information needs of the intended users of the service, the identification of the objectives of the service, the managerial structure for the development and implementation of the service, resources available for the development of the service, and ways to evaluate the success of the service (Bertot & Jaeger, 2006). Other benefits of a well-planned and properly implemented E-government project are discussed below.

2.8.1 Increased capacity of government

According to Ndou (2004) when ICTs are deployed for the reorganization of internal structures within government Agencies it enhances information flow and facilitates functions such as inter and intra-Agency communication exchanges and quicker processing of administration transactions which combines to increase government capacity. The use of government Intranets enables government Agencies to share database and capacities of their members towards a synergetic working relationship for better service delivery. Administrative bottlenecks are reduced, and governments become leaner and agile with the capacity to be more responsive to citizen's needs. Additional benefits to the government may include reduced overheads through costs savings which could in turn translate to lower taxes for the citizens.

2.8.2 Transparency, anti-corruption and accountability

Transparent, accountable and inclusive decision-making processes can be facilitated through E-government initiatives (Bertot *et al.*, 2010; Harrison & Sayogo, 2014; Gonzalez-Zapata & Heeks, 2015). When government encourages e-participation through online forums and provide timely feedbacks the citizens feel more confident in government activities. To achieve this form of participatory process, government web-portals must be carefully designed to encourage easy and open access. Governments should also make available to the public easy online access to a variety of online

government activities relating to economic and legislative aspects of government which has the potential to increase transparency and promote good governance.

2.8.3 Cost reduction and efficiency gains

Tapscott (1996); Amit & Zott (2001); and Malhotra (2001) cited in Ndou (2004) all agree that ICTs has the capacity to contribute to cost reductions and efficiency gains for private organizations (Oyeniran *et al.*, 2014). These benefits represent major aspects of E-government initiatives. When public services are made available online it reduces the processing times and associated costs of services which otherwise would have taken more time and cost if compared to the manual process of handling similar operations.

2.8.4 Quality of service delivery to business and customers

In bureaucratic and traditional models of government the procedures for public-sector services are often characterised by time consuming activities and a general lack of transparency in service provisions. Businesses are often required to complete lengthy manual applications before permits or licenses are issued. Customers often spend long waiting times in business premises before they can access the services which would have otherwise easily accessed through online web portals. Sometimes people would have to travel to the physical locations of government offices and Departments and spend a lot of time completing paperworks to get an otherwise simple service that could be made available online. These sorts of activities translate to high costs of services for the citizens who may end up going home out of pocket and dissatisfied with the quality of services received. E-government offers an alternative method of service provision. By putting services online, the cost of governance is reduced. E-government reduces bureaucratic bottlenecks, speeds up accessibility to information and services, promotes fast and convenient transactions, and enhances the quality of services in terms of time, content and accessibility.

2.8.5 Network and community creation

The growing use and capabilities of ICTs create opportunities for online communities and Network creation by governments. As discussed earlier, E-government entails using ICTs to manage relationships between governments, customers, businesses, employees and other government Agencies. Managing these relationships require a careful balance

between Stakeholders to arrive at an outcome desirable to all parties. E-government initiatives are complex undertakings that require a collaborative or Networked approach to put together technologies, skills, information and knowledge that are essential to the development and implantation of a system of governance that transverse boundaries of various governmental bodies. Partnership arrangements between diverse governmental bodies calls for learning and training between government Agencies to promote harmonious working relationships and information sharing. The provision of integrated services through a single-window government portal (one-stop-shop) require the cooperation, collaboration, and coordination of different Departments and Agencies working across multiple lines of integration to achieve a common goal. Mansell and Wehn (1998) cited in Ndou opined that "successful use and diffusion of ICTs in the public-sector involves a collective, multidisciplinary and dynamic learning process" (2004, p.10). Such learning process underpins the collaborative and Networked nature of any successful E-government system of governance.

2.8.6 Promote the use of ICTs in other sectors of the society

Local community activities and cohesion are better achieved through the continuous process of interactions and communications among governments and the various stakeholder within the community. This interaction could be facilitated through an effective use of ICTs to disseminate public information and services. Mansell and When (1998) cited in Ndou (2004) stated that E-government initiatives play important roles in initiating the process of capacity building and in coordinating the actions of the Stakeholders. In government-to-business (G2B) electronic transactions, businesses could make use of electronic equipment to leverage on opportunities make available through E-government initiatives. The development of new technologies and management capacities of public-sector organisations required for the functionalities of E-government equally calls for new investments in the form of trainings - especially in colleges and universities - to address the issues relating to the supply of skills needed in the emerging E-government paradigm.

2.8.7 Improved quality of decision making

Governments seeking inclusiveness and greater participation from their citizens as part of its good governance strategy should continue to invest in continuous community

interaction and communication with its citizens using web-enabled online government portals that apart from facilitating communications, should also be able to provide timely feedbacks for those participating in online forums and chatrooms. By actively participating in online discussions, the citizens can contribute to ideas that shape government services. Doing this can stimulate trust-building in government and improve relationships between the government and the citizens. The OECD is of the opinion that relationship between government and citizens could be strengthened, and quality of services improved if government leverage on wider sources of information and perspectives with a view to providing better solutions to meet the challenges of policy-making under conditions of increased complexity (OECD 2001; OECD, 2017).

2.9 CHALLENGES OF E-GOVERNMENT IMPLEMENTATION

While E-government initiatives predicated on ICTs are powerful drivers of economic growth and good governance, there exist many challenges which hamper the exploitation of the numerous opportunities E-government holds. The multidimensional nature and complexity of the E-government system brings with it a wide variety of challenges that needs to be understood and managed carefully if E-government initiatives are to succeed. Ndou (2004).

2.9.1 ICT Infrastructure

In building capacity for E-government developments and implementations, availability of ICT infrastructure is recognised as a major challenge confronting developing countries. Tapscott (1996) cited in Ndou (2004) argued that interNetworking of government Departments and Agencies is needed to facilitate adequate sharing of data and information across Agency boundaries and to open new channel of communication and delivery of new services. The development of basic infrastructure is therefore a must-have if government wishes to benefit from the opportunities presented by new technologies that are being developed and deployed in societies at increasingly fast pace. Infrastructure development must be prioritised, and different access methods encouraged and promoted. Such access could be by data-driven mobile phones and satellite receivers, Internet kiosks and contact centres to mention just of a few of the possibilities. Besides building physical infrastructures, government should also lay emphasis on E-readiness, human capacity building and skills development in the form of ICT literacy programmes.

Governments can engage in continuous campaigns to draw attention to stimulate interest in computing activities that will benefit the wider society as part of its policy on good governance and public-sector reformation agenda.

2.9.2 Policy issues

Developing and implementing E-government require newer kind of laws and rules that adequately address issues pertaining to use of electronic devices and the Internet in connection with governance. Government need to enact legislations that will guide the development and adoption of online activities that are derived electronically. Issues of computer and intellectual property right and copyrights must be investigated and protected. Electronic signatures, data protection, cybercrime, are all pressing issues that has arisen due to the expanding use of the Internet and requires some form of legislation. Establishing such legislative reforms would promote security, privacy and recognition of electronic signatures and interactions conducted electronically. Governments must actively pursue the development of key infrastructure that will guarantee secure transactions and promote trustworthy online engagement between governments, organizations and individuals especially in developing countries.

2.9.3 Leadership

Aside from the issues of physical infrastructure, leadership in the context of public-sector organisations is characterised by some unique set of challenges. Reform agendas that are unclear combines with lack of visionary leadership to hamper E-government implementation in developing countries around the globe (OECD, 2001). Good leadership is a major driving force behind innovative projects. Complexities of E-government system requires visionary and capable leadership at all levels of government. The risks and challenges, together with the high cost of maintaining public Agencies require careful attention if wastages in public funds are to be avoided. Knowledgeable leadership is essential before, during and after project implementation if projects are to remain within the expected budget and time frame. Change management is also a vital procedure in E-government implementation that requires effective leadership. Good leadership is required for making management improvement that promotes accountability, overcome organisational resistance to change, channelling the resources needed to improve management, and building and maintaining organization-wide

commitment to new ways of governance (U.N, 2008, 2014, Ansell & Gash, 2008; Tassabehji et al., 2016).

2.9.4 Partnership and Collaboration

Cross-agency collaboration at all tiers of government are important elements in the E-government development and implementation processes. However, the complexities of E-government make collaboration and co-operation a difficult to achieve in actual practise. It is a widely held belief that governments in bureaucratic environment often put up considerable level of resistance to open their activities to the scrutiny of the public and would often rely on permissions and authorisations from senior government officials to carry out otherwise simple tasks owing to the hierarchical nature of traditional way of government. To promote working together and partnership arrangement between public and private sectors, all E-government Stakeholders must work together transparently to build mutual trust. Collaboration in the context of E-government requires that resources are shared across organisation boundary lines. ICT technical skills and infrastructure must be shared willingly, learning and development courses must be developed jointly, governmental Departments and Agencies should be regularly encouraged to share knowledge through harmonised datasets and information. E-government goals must be set jointly, and efforts made to achieve them. For E-government to succeed there is the need for concerted effort by E-government Stakeholders to work together across organisational boundaries in a coordinated manner to achieve the goals and objectives of a governance system that truly serves the need of the people (Yang and Maxwell, 2011; Chen, Lin and Yen, 2014; Gil-Garcia and Sayogo, 2016a; Baka, 2017)

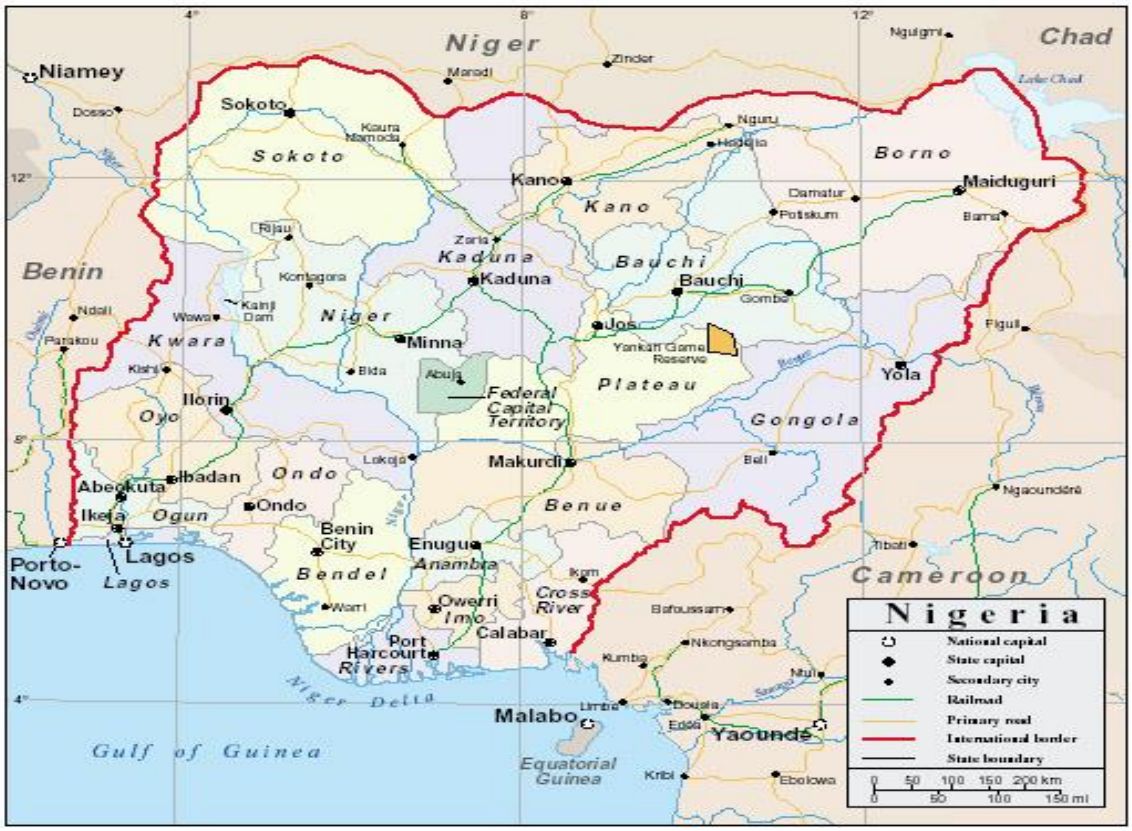
2.10 ICT AND E-GOVERNMENT IN NIGERIA

2.10.1 Research setting: Country profile

Nigeria is geographically situated on the Gulf of Guinea with a coastline totalling 853 kilometres in West Africa with a landmass of 923, 768 square kilometres. It shares borders with Cameroon (1,690 kilometres) to the east, Chad (87 kilometres) to the northeast, Niger (1,497 kilometres) to the north, and Benin (773 kilometres) to the west. Nigeria has five major geographic regions - low coastal zones along the Gulf of Guinea,

Plateaus and Hills to the north of the coastal zone, broadly steeped Plateau that stretches to the northern border having altitudes in the regions of 1,200 meters, and mountainous zones along the eastern border. Nigeria is divided into 36 states and 774 local government areas. The federal capital territory (FCT) is Abuja.

Figure 7: Map of Nigeria.



Source: Adapted from mapsofworld.com

Nigeria is the most populous country in Africa with an estimated population of 184 million (World Bank, 2017). Nigeria is a major regional player in West Africa, accounting for over 47 percent of the region's population, and one of world's largest population of youths (World Bank, 2017). Nigeria is a culturally diverse country with multiple ethnic groups. The major ethnic groups in Nigeria are Yoruba, Hausa, and Ibo. Although there exist hundreds of languages in Nigeria, the official language spoken is the English language.

Nigeria gained independence from the British on October 1st, 1960. Since independence, Nigeria has witnessed a long period of political instability, with frequent military incursions into her political arena (Azenabor, 2013). In 1999, following the end of the

military incursion into government, a new constitution was adopted and a peaceful transition to civilian government was completed. The Nigerian government continues to grapple with the difficult task of institutionalizing democracy and reforming the economy which has depended mainly on sales receipt from crude oil. The general elections of April 2007 marked the first civilian-to-civilian transfer of power in the country's history and the elections of 2011 were generally regarded as credible, free and fair by international monitoring officials who witnessed the election.

In 2015, Nigeria witnessed the fifth consecutive transfer of political power in a democratic election that saw Muhammadu Buhari emerge as the winner of the presidential election. According to the World Bank report of 2017, the administration of President Buhari is prioritising the fight against corruption in the public-sector organisations, diversifying the economy, and tackling unemployment (World Bank, 2017).

The economy of Nigeria relies heavily on oil exportation to earn revenue for the government. Between 2006 and 2016, Nigeria's GDP grew on average at 5.7 percent per annum (World Bank, 2016). Volatile oil prices have had tremendous effect on the Nigerian economy. The high oil prices in 2006 saw the economy grow at 8 percent per annum, while the collapse of oil prices in 2016 saw the Nigerian economy enter a period of recession after contracting for five consecutive quarters, resulting in a negative economic growth of -1.5 percent (World Bank, 2017). The second quarter of 2017 has seen a return to positive economic growth in Nigeria with a 0.6 percent GDP growth. The World Bank (2017) reported that the current political administration in Nigeria has embarked on the implementation of structural economic reforms to strengthen the economic growth and recovery in Nigeria.

The Nigeria government having realised the need to reform its public-sector organisations, has endorsed E-government programmes (Ashaye, 2014). To increase awareness for E-government use in Nigeria, Ashaye (2014) reported that the Nigerian government have been organising seminars and conferences for public awareness and to promote collaborative participation across all tiers of government in Nigeria. Existing studies that has investigated E-government in the Nigerian context have focused mainly on E-readiness issues and less on issues bordering on the actual implementation of E-government projects (Choudrie *et al.*, 2012; Choudrie *et al.*, 2017). Extant E-government literatures have pointed to the efforts countries in Sub-Sahara Africa, including Nigeria,

are making to develop and implement E-government programmes in their respective countries (Schuppan, 2009; Rorissa & Demissie, 2010; Undesa, 2016).

According to Asogwa (2013), the Nigerian government has set up the "National eGovernment Strategy" (NeGSt) to explore ways to use ICTs and related infrastructures to enhance delivery of public services in Nigeria. It is expected that E-government programmes would promote effective and efficient service delivery across all tiers of government in Nigeria, thereby leading to the realisation of the vision 2020 development goals. Asogwa (2013) suggested that the Nigerian government should conduct a SWOT analysis of its E-government plan to identify areas of strength and weakness, and to develop action plans to strengthen E-government infrastructure and improve electricity supply before fully committing to E-government projects.

Although there is significant improvement in E-government adoption and use in Sub-Sahara Africa (Undesa, 2016), comparatively the region still experiences much lower uptake of E-government when compared to industrialised western nations (Undesa, 2016; Choudrie *et al.*, 2017).

2.11 E-GOVERNMENT DEVELOPMENT IN NIGERIA

Digital government projects often involve multiple and diverse Stakeholders who need to collaborate on projects to reach agreements on the goals and objectives of projects (Luna-Reyes *et al.*, 2013). Project goals and activities of government are usually constrained by institutional arrangements (Fountain, 2006; Baka, 2017) such as government policies, laws and regulations, alongside other context-related factors which includes specific economic situations, demographic conditions, or broader issues of technology adoption and access (Luna-Reyes *et al*., 2013; Luna-Reyes *et al*., 2014; Arduini *et al.*, 2013). The various elements necessary for the development and implementation of an E-government system must be carefully considered within specific context to appreciate the opportunities and challenges of adopting an E-government system that is both viable and acceptable to both government and the citizens.

One of the goals Nigeria has set for herself is to be among the leading 20 economies in the world by the year 2020 (Fatile, 2012). To achieve this aim, the Nigerian government recognises that economic growth could be attained through an increase in its national

competitiveness. It also understands that national competitiveness would have to be predicated on new form of governance; one that leverages the potentials of ICTs to deliver effective and efficient public-sector services. Fatile further explained that there are numerous initiatives geared at speeding up development in Nigeria through embracing technology within her polity (Fatile, 2012). In May 2010, at a World Congress in Amsterdam, Professor Akunyili (former Nigerian Minister of Information and Communications) narrated the E-government journey of Nigeria in her gradual move towards e-governance. She stated that though Nigeria had been able to join the global use of Information and Communication Technologies (ICTs) as a consumer of personal computers and digital electronics, Nigeria was making ICT relevant to the needs of its citizens. She explained that the deregulation of the telecommunication sector in 1992 and the auctioning of GSM licences in 2001 resuscitated the telecoms sector in Nigeria (Akunyili 2010). She further narrated that Nigeria went from less than 500,000-fixed telephone lines to about 72 million active mobile subscribers by the end of 2009. Professor Akunyili stated that deregulating the telecommunication sector and the injection of foreign direct investments into the Nigerian economy had increased Nigeria's tele-density to over 51% as at the end of 2009. Akunyili narrated that as at 2009, there were $18 billion investment made up of local and foreign direct investment (FDI) in the ICT-based sector of the economy. Akunyili further argued that the mobile telephone increasingly became the primary device for broadband access in Nigeria. She based her submissions on the report of International Telecommunication Union's (ITU) survey of household computer ownership across Africa in 2007. She observed that broadband is a growth industry in Nigeria; however, admitted that it would be quite tricky to track its use because unlike in advanced countries where broadband and Internet access is often procured individually, in Nigeria many people use the cybercafés and office facilities to go online because of not having personal computers of their own. In her opinion, Nigeria and indeed Africa is taking a different route to bridge the digital divide using mobile phones. The reasons advanced for this development according to her is that 'mobile phone signals are more diffused, and the hardware is more affordable than the Personal Computer'. Since smartphones combines the abilities of the Personal Computers (PCs) and mobile phone, Akunyili opined that PC ownership or lack of it should not be a yardstick to gauge the size of digital divide.

According to the National Communications Commission(NCC) website (https://www.ncc.gov.ng/statistics-reports/subscriber-data) it was reported that between

January 2018 and May 2019 there was a total of 254, 921,942 active telephone lines in Nigeria which is made up of the following: Mobile (GSM) accounted for 173, 405,294 active mobile lines; Fixed wired/Wireless lines accounted for 109, 247 active phone lines; and Voice over IP (VOIP) accounted for 157, 792 active telephone lines. These figures showed a tremendous growth in the telecommunications sector which resulted in a tele-density rate of 90.97 percentage of the population from 51 percent at the end of the year 2009.

Adeyemo (2013) observed that there have been contradictory views of Nigeria's level of development and economic potentials in the international community. He explained that the contradiction usually manifests itself in the low level of rankings Nigeria often receives from various surveys made by international organizations.

The National Information Technology Development Agency (NITDA) has the responsibility to established platform for ICT development in Nigeria to promote significant G2G awareness, and setup a basis for E-government initiative in Nigeria as part of the government's strategy to promote E-government adoption and use across government activities in Nigeria.

Documents in the public domain suggests that the implementation of E-government has begun in Nigeria, however, there is little research evidence to confirm a clear framework for the development and adoption of E-government in Nigeria. According to Yusuf (2006), cited in Mundy & Musa (2010), E-government activity in Nigeria is low. According to Mundy and Musa (2010) many of the government's websites in Nigeria are still in the "publish stage" and a few government organisations are at the "transact stage". Like many other African nations and developing economies around the world, there are numerous problems which influence the development and implementation of E-government in Nigeria. These are basically technology related infrastructures such as poor electricity supply and distribution, low tele-density, problems of Internet diffusion, and low adult literacy level. Other factors such as socioeconomic and politically related issues also have an immense bearing on the government efforts to develop and implement functional E-government systems in Nigeria.

Irrespective of these problems, Nigeria is moving towards developing and implementing E-government initiatives within her public-sector organisations. According to Okoye (2011) in December 19, 2011 Nigeria successfully launched a broadcast satellite (NIGCOMSAT-1R) into orbit from a Chinese launch pad. The satellite is expected to

provide ICT infrastructures such as Internet broadband and telecommunication services that will provide broadcasting services in Nigeria and other African countries (Okoye, 2011). The NIGCOMSAT-1R could significantly improve mobile telecommunication in Nigeria and increase E-government activities and uptake in Nigeria if it is fully utilised.

According to a newspaper article by Emeka Aginam (2014) published in the Vanguard newspaper in Nigeria, “the Ministry of Communication Technology claimed to have embarked on initiatives to deploy ICT to drive transparency and efficiency in governance and public service delivery”. Aginam (2014) stated that to enable internal efficiency in government, the Ministry of communication technology should promote ICT in government by facilitating E-government, which enhances transparency, efficiency, productivity, and citizen engagement. Extant literature shows some E-government initiatives of the Nigerian government to include projects such as the ‘Getting Government Online’. The 'Getting Government Online' initiative of the Federal government through the Ministry of Communication Technology comprises two flagship projects: Government Service Portal (GSP) and Government Contact Centre (GCC). The Government Service Portal (GSP) provides a single window technology access for citizens and other Stakeholders to government services provided by various Ministries Departments and Agencies. The GSP is multi-featured and includes collaborative channels that deliver core content management capabilities.

The government claims that the primary objectives of deploying GSP are to create a single point of entry to Federal Government services, enhance accountability, and improve the delivery and quality of public services by leveraging the opportunities provided through technology-enabled civic engagement such as the use of mobile technology and internet-enabled devices.

Efforts by the government of Nigeria to advance its E-government uptake and improve its ratings and ranking is becoming visible in the United Nation’s E-government development survey reports which have shown an upward improvement from 0.2929 in 2014 to 0.3291 in 2016 and to 0.3807 in the 2018 UN E-government survey reports. The recent upward trend has seen Nigeria moved from the lower ranking position to the middle ranking position.

2.12 LAGOS STATE E-GOVERNMENT INITIATIVES

Archival documents within public domain suggest that from the late 1990s onward, Lagos State Government had embarked on the use of ICTs to improve service delivery and enhance internally generated revenue for Lagos State (Choudrie *et al.*, 2017; Olumoye and Govender, 2018).

Lagos State of Nigeria was selected as the source of empirical data that were used for this research study because of the strategic importance of the State as the de facto capital of Nigeria owing to the socio-economic, cultural and historical importance of Lagos State. Additionally, Lagos state is the largest city in terms of population size in Nigeria with a population of over 15 million inhabitants. Literature shows that Lagos State is often referenced as being in the forefront in terms of E-government development in Nigeria and used as pilot study for implementing ICT projects in Nigeria (Choudrie *et al.*, 2017; Olumoye and Govender, 2018). Lagos State is also believed to be the melting pot of many ethnic groups in Nigeria and plays host to people from every other State in Nigeria.

The researcher is confident that results obtained from an empirical investigation in Lagos State can be generalised to other parts of Nigeria.

2.12.1 LAGOS STATE E-GOVERNMENT INITIATIVES

GLOBAL COMPUTERISATION PROGRAMME

Beginning in 2001, Lagos State government began its "global computerisation programme (GCP)" aimed to support the use of information technology across private and public-sector enterprises in Lagos State (Tinubu, 2000). The GCP involved the development and deployment of Oracle's ERP system within and across key Ministries in Lagos State. The GCP project was managed and supported by a USA-based IT consultancy firm. The GCP project involved the development and implementation of Networks consisting of fibre optics cables, hardware, software and skills training through capacity building on how to use the new system being built.

During the early stages of the Lagos State Government’s globalisation computerisation programme, I was privileged to work with members of the implementation team that were

based at the Computer Centre at the Lagos State Secretariat. At the time, I was a third-year computer science student at the University of Lagos undergoing my industrial training (SIWES). I was at the Computer Centre at the Lagos state ministry of science and technology which at the time hosted the implementation team. While working with the development and implementation team, I observed first-hand how the computerisation projects were being set up to deliver effective revenue collection computerised system for Lagos state government. The implementation covered various modules some of which included: account payable, account receivable, payroll, and treasury management (www.lagosstate.gov.ng) In 2005, the Lagos State government introduced electronic smart card to replace the paper-based tax clearance certificate which the government claimed had become ineffective due to fraudsters who engaged in manipulating and forging paper-based tax clearance certificates and in the process causing the government to lose significant amount in revenues meant for the government (The Comet Newspaper, 2003). The computerised tax payment system (e-Taxation) made the digitalising of taxpayer's data possible and in turn, facilitated verification and updating of tax data and information.

LAGOS STATE GEO-INFORMATION SURVEY (GIS)

According to a newspaper article published in the Guardian Newspapers of Nigeria (2009) the Lagos State Government announced the computerisation of the land registry and the launch of cadastral mapping and geo-information survey scheme (GIS).

LAGOS STATE LAND USE ADMINISTRATION AND E-GOVERNMENT

Documents in public domain revealed that the current system of land titling, ownership, possession and administration in Lagos State of Nigeria are characterised with so much uncertainty, insecurity, less clarity and daunting bureaucratic procedures that makes them difficult to obtain and their validity questionable. The slow bureaucratic process of obtaining these documents results in low operational performance which in turn results in revenue loss for the government and the economy. A system that is laden with so much human interface and operated manually is prone to error and subject to corrupt and inefficient practice. Under the current administration, virtually all aspects of land management are done manually. Land use charges and other property-based levies are still being assessed manually, arbitrarily by the rule of the thumb and at the discretion of

the officer in charge (Land Use Charge Law 2004 of Lagos State). Duplication of Certificate of Occupancy over the same land, improper mapping and charting of surveys and orchestrated false reports are still prevalent. Although the Land registry claimed to have been computerised, its efficiency is yet to be seen. Accessing land information is an exercise that still takes days to complete in Lagos State of Nigeria.

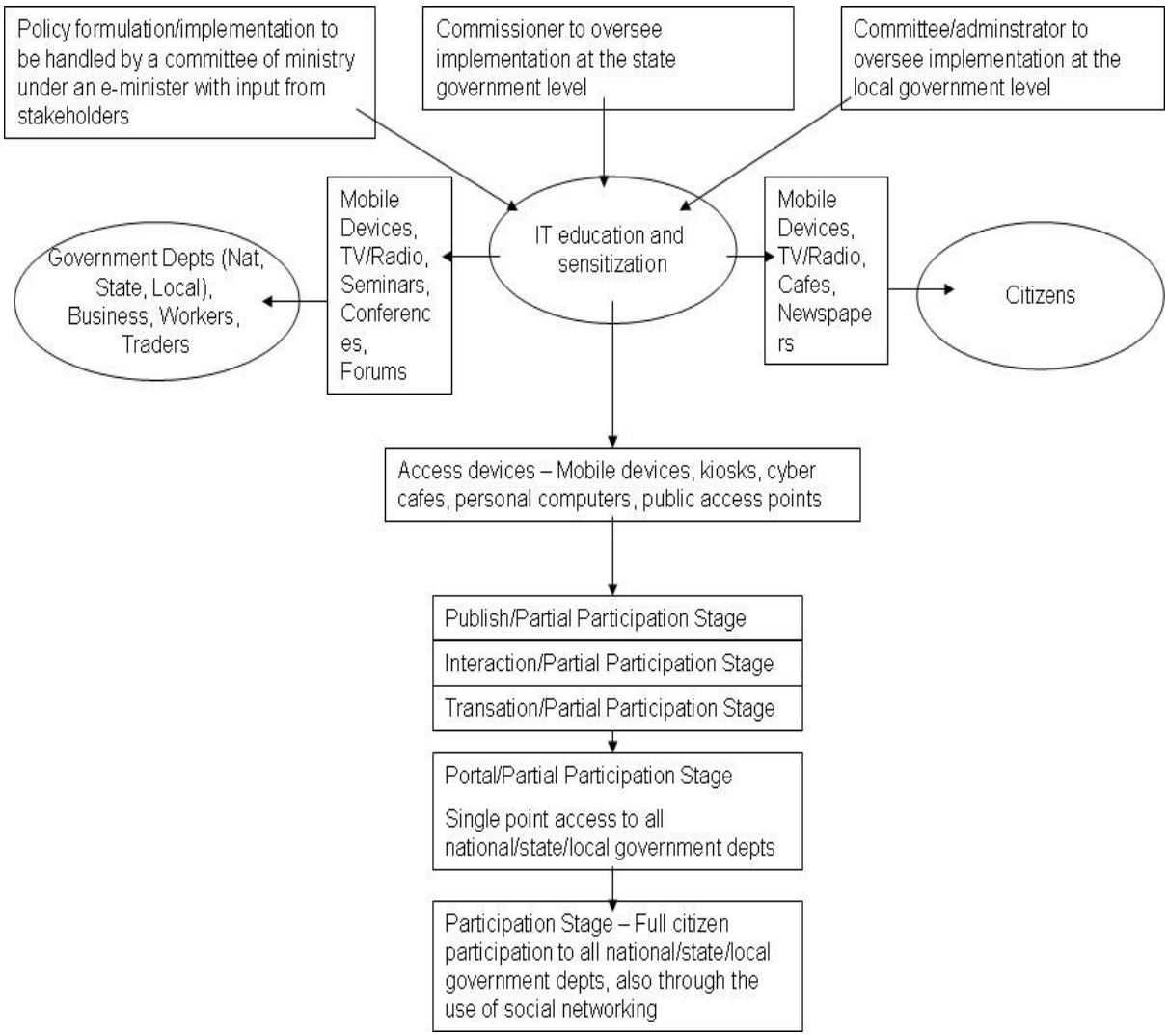
2.13 E-GOVERNMENT FRAMEWORKS IN NIGERIA

While there has been numerous research on E-government with respect to its development, implementation and practice in the Western World, there have been fewer literature on E-government frameworks and models designed for use in public-sector services in Nigeria and in Sub-Sahara African countries that are suitable for adoption due to the socioeconomic realities and technological competence of the many of the host communities in Africa (Schuppan, 2009; Verkijika and Wet, 2018). During this research work, I came across two E-government frameworks that are specific in context to Nigeria. Although original in context, the E-government frameworks and models were mainly prescriptive; describing general characteristics of E-governments and with little reference to its practicality for implementing reforms in the public-sector services in Nigeria. The frameworks did not present empirical evidence to support how its constructs were developed, nor demonstrated any sort of consensus-building mechanism amongst E-government Stakeholders in Nigeria. The lack of empirical evidence to demonstrate how these E-government frameworks were developed made them limited in scope and capabilities and thus cannot be relied on for E-government implementation in actual practise. The two E-government frameworks are described below.

2.13.1 Framework for state e-Government

Mundy and Musa (2010) proposed an E-government framework for state level implementation. In developing their framework, consideration was given to findings from the citizen requirements survey. Their framework proposed that formulation of policies, laws, and strategies for E-government implementation must be sourced at the federal government level. They suggested that there must be specific drivers for the formulation of these laws and policies that must originate from government. The framework proposed by Mundy and Musa lacked constructs on interoperability and cross-agency collaboration which are essential for E-government systems.

Figure 8: Framework for the development of eGovernment in Nigeria at National level

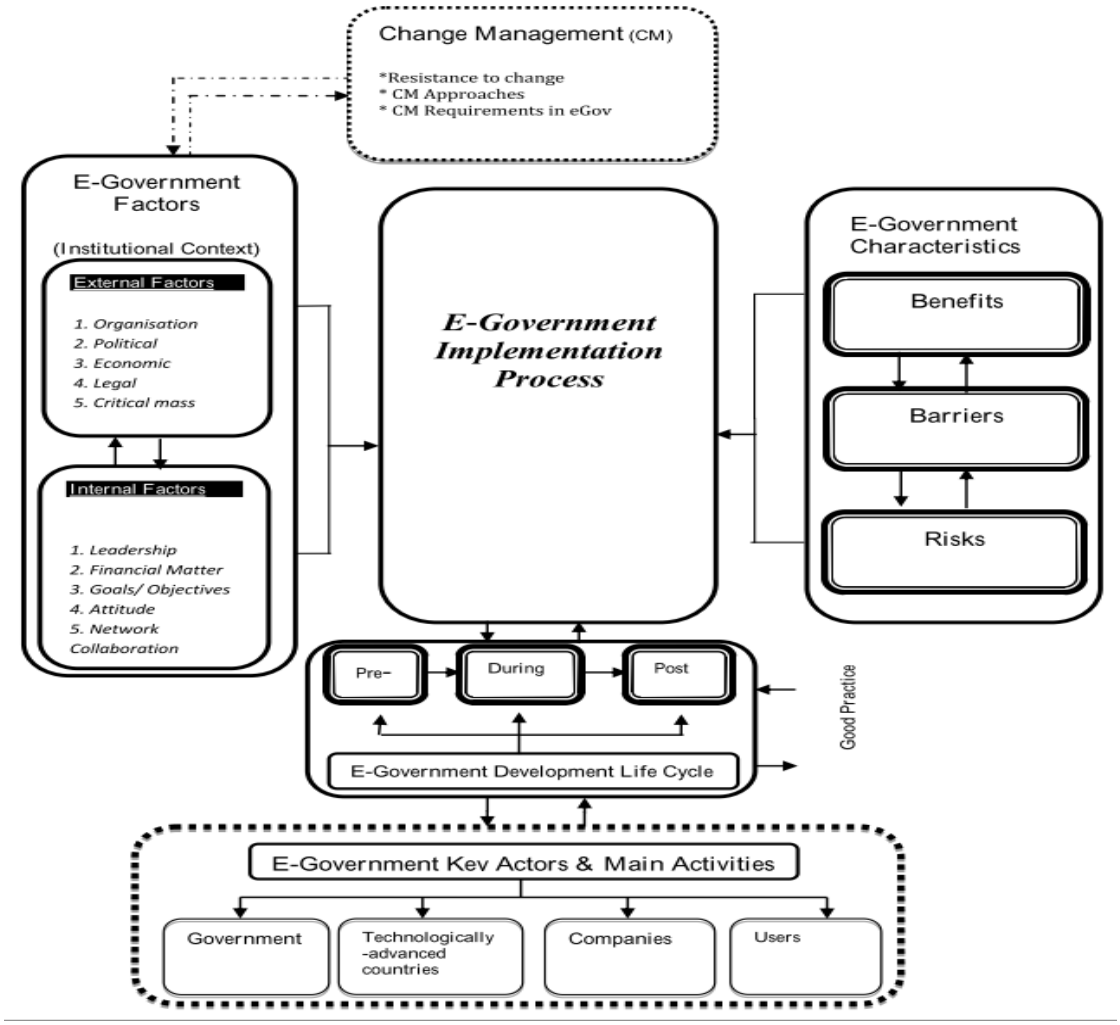


Source: Adapted from 'Towards a Framework for e-Government Development in Nigeria'. Mundy and Musa, (2010).

2.13.2 E-government Implementation Framework

Ashaye (2014) in his conceptual model of E-government, further refined the frameworks proposed by Mundy and Musa (2010) by incorporating E-government internal and external factors such as political, economic, legal, leadership, and financial matters. He also included other factors such as Barriers, Risks, Good Practice, and Key actors into his conceptual model of E-government. Ashaye explained that in exploring institutional theory, his framework allows for the wider application of IS/IT context as it helps researchers explain why formal security structures should be created and maintained by organisations.

Figure 9: E-government Implementation Framework



Source: Richard Ashaye, (2014).

2.14 NATIONAL INFORMATION TECHNOLOGY DEVELOPMENT AGENCY (NITDA)

The National Information Technology Development Agency (NITDA) was established in 2007 by the Federal government of Nigeria to create a framework for the planning, research, development, standardization, application, coordination, monitoring, evaluation and regulation of Information Technology practices and related activities and systems in Nigeria (www.nitda.ng).

NITDA's role as set out in its mandate is to develop Information Technology in Nigeria through regulatory standards, guidelines and policies. In addition to setting regulatory IT

standards and policies, NITDA also serve as the clearinghouse for all IT projects and infrastructure development in Nigeria. NITDA is the prime Agency for E-government development, implementation, Internet governance and general IT development in Nigeria. In line with its mandate, NITDA oversees the development and deployment of information technology in Nigeria through human capital development, provision of IT infrastructures and creation of enabling environment for the development of IT in Nigeria. According to the information on NITDA's website (nitda.gov.ng) its E-government development and regulatory core functions are:

- To ensure coordination and implementation of National E-government Masterplan;
- To develop and drive strategies that will encourage and improve the adoption and use of Information Technology (IT) in government service delivery;
- To coordinate the Government's adoption of IT tools in service delivery;
- To develop and monitor the uptake of minimum standards and guidelines for E-government in Nigeria;
- To develop E-government capacity among MDAs;
- To collaborate with MDAs in developing tailor-made plans and strategies for E-government in Nigeria;
- To license vendors that intend to collaborate with MDAs in the delivery of E-government services; and
- To monitor and ensure the implementation of standards for government websites and handle matters relating to the 'gov.ng' domain.

2.15 BENEFITS OF E-GOVERNMENT IN NIGERIA

E-government initiatives when properly implemented has the potentials to transform relationship between governments, citizens, and businesses in a variety of ways ranging from provision of online government information, conducting online e-transactions, e-tax payment systems to more complex structures of building "smart cities" driven by ingenious applications of Information and Communication Technologies (Millard 2013; Gil-Garcia 2012; U.N 2014). Esteves and Joseph (2008) observed that 'value' can be created with the aid of Information Technology by using it in an innovative manner in public-sector service delivery. Esteves and Joseph further asserted that at different levels

of application of Information Technology, different forms of 'value' are generated as it redefines transaction processing using IT platforms. Ashaye in his doctoral thesis suggested that E-government benefits in Nigeria included "improved productivity and service quality, reduced overall cost, reduced intra-Agency paperwork, and reduced data collection" (2014, p.281). He posited that E-government can further provide benefits such as improved collaboration, promote the use of ICT, improve business process, and promote Network and community cohesion. In practise, Fatile observed that "there are several programmes aimed at accelerating the development of E-government in Nigeria" (2012, p.131). He argued that several Nigeria E-government initiatives has already been positioned towards connecting communities, vital Agencies, and institutions of government and educational institutions at all levels using ICT and related infrastructure. Fatile listed Nigeria's E-government initiatives to include IT-based projects such as the National Rural Telephony, Public Service Network (PSN), Internet exchange port initiatives, State and local Government ICT facilities, loan scheme initiatives, and wire Nigeria initiatives (Fatile, 2012).

Other government initiatives that has been improved through web-enabled ICT facilities are:

2.15.1 Health Sector

The health sector is in the forefront of combating the menace of drug counterfeiters through the introduction of schemes such as scratching the security labels on packs of drugs to reveal special numbers that could be used to verify the authenticity of such drugs from government Agency such as NAFDAC. This practise has helped reduce issues associated with counterfeit drug peddling in Nigeria by unscrupulous businessmen (Fatile 2012). This practise is an example that confirms the two-way communication phase of E-government as described in the 'transaction' phase of the UN E-government maturity model. According to the Federal Ministry of Health and the Lagos State Ministry of Health websites, the health sector in Nigeria has recorded some level of success in developing and implementing Internet web portals that can be used to deliver public services with the help of Internet-enabled technological devices. Services provided through these web portals include information on public health issues.

2.15.2 Financial Sector

According to Fatile (2012), there has been notable transformation of the financial institutions in Nigeria as a result of improvement in integrated data systems and interconnectivity among financial institutions. Fatile explained that the integration of data systems and interconnectivity of financial institutions has not only significantly reduced fraudulent practices in Nigeria, but has also reduced delays associated with clearing of transactions, which hitherto had taken days or weeks to process (Fatile, 2012). Fatile observed that in promoting transparency and accountability in public-sector organisations in Nigeria, anyone with an Internet-enabled device can access the local or state monetary allocations from the Ministry of Finance's website. He asserted that the figures obtained can be compared with expenditures from the local governments to verify how and what the funds were spent on. Fatile claimed that e-payments, cheques and other forms of payments can be made ready within minutes or hours unlike what was obtained before when orders in paper forms and cheques had to be taken physically from one bank branch to their headquarters and down again to the branch of the customers. He observed that the introduction of automated teller machines has also reduced drastically the incessant queues formerly prevalent in banking halls when transferring or withdrawing cash. In addition, the introduction of e-mails, e-verification of payments and e-transfers has made it convenient for customers to make online transaction and reduced the time taken to do so. According to Fatile, the use of sophisticated technologies made possible through E-government initiatives has led to the apprehension of many top government functionaries and managers of industries involved in money laundering and other financial crimes at home and abroad (Fatile 2012). He further stated that many states and local government's board of internal revenue have developed functional databases to monitor individuals and cooperate organisation taxes to know when they are due for payment, and when paid, how much was paid and by whom. From Fatile's assertions, one can conclude that the process of automating tax collection and payment systems will promote transparency and accountability within the public-sector organisations in Nigeria.

According to Choudrie et. al., (2017) Lagos State in Nigeria has invested significant resources in developing various e-services. The implementation of advanced ICTs in Lagos State began in 2001 with the development of the Global Computerisation Programme (GCP) to support implementation of ICTs across private and public-sector organisations. The GCP project was established as a joint venture with a USA-based

consultancy to implement an Oracle ERP system comprising Network infrastructure, hardware and software that could be deployed to enhance the growth of the Lagos State economy and for the provisioning of e-services (Choudrie *et al.*, 2017).

2.15.3 Abuja Geographic Information System (AGIS)

According to Danfulani (2013), the establishment of Abuja's Geographic Information System (AGIS) in the Federal Capital Territory (FCT) in 2003 has helped to reduce the activities of land racketeers who hitherto had been trading in non-existing lands or selling the same plots of land to various people and in the process making billions of Naira. It is interesting to note that some public officers of the Lands Department were caught in the act of selling green zones and other strategic locations not earmarked for residential or commercial purposes (Danfulani, 2013). The AGIS provides a comprehensive, all-inclusive state-of-the-art computerised geospatial data infrastructure for the Federal Capital Territory (FCT) and computerized cadastral and land registry for the Federal Capital City, the area councils and the satellite towns of the Federal Capital Territory. In addition to the AGIS system, timely access to government information and services are available online on some government websites. A direct benefit of some of these projects are that they have the potential to eliminate the need for customers traveling to government offices and building in search of information that can be accessed and available online.

2.16 FACTORS IMPEDING THE DEVELOPMENT OF E-GOVERNMENT IN NIGERIA

E-government in general can improve the delivery of public e-services and is useful for solving administrative problems in both inclusive and participatory ways. Although the concept of E-government was initially developed in industrialized countries, one must not assume that the concept is automatically appropriate for developing nations which still lacked capacity to develop and implement E-government (Schuppan, 2009). To mitigate or reduce the problems of failed government IT projects, E-government Stakeholders in Nigeria should make concerted efforts towards confronting the challenges posed by adoption of E-government in a contextual manner (Heeks, 2002).

Efforts should be focused on developing and implementing IT projects that are feasible in Nigeria using local content given the limitations of its infrastructural and technological competence. Nigeria is seen to present an interesting case to researchers in the development and implementation of its E-government strategies (Mundy & Musa 2010; Akunyili 2010; Adeyemo 2011; Fatile 2012; Choudrie *et. al*., 2017). The reasons advanced for this development by various E-government researchers in Nigeria is attributed the vast population, low ICT diffusion, high level of corruption practises in government, poor and inadequate infrastructure, inadequate and unskilled workforce, and the general lack of E-readiness in Nigeria.

E-government as a system of governance is not limited to the publishing of government data and information on government websites alone. E-government involves a great deal of e-readiness on the part of all Stakeholders. Mundy and Musa (2010) defined E-readiness as the preparedness of a country for E-government in terms of the technological infrastructure, human resource development and telecommunication infrastructure. E-readiness can also mean the willingness of the government to take advantage of the opportunities made available by advancement in technology to improve the quality of life for the citizens through the use of ICTs and related technologies (Mundy & Musa, 2010). For E-government to succeed, there should be necessary legal and regulatory framework available to support and ensure positive end-user perspective towards E-government development and implementation. When adequate E-government projects that are citizen oriented and accessible are put in place, citizens are motivated and encouraged to participate in E-government (Mundy & Musa 2010; U.N, 2008). Adeyemo examined the United Nation's global E-government readiness index (U.N, 2004; 2005; 2008) and concluded that the U.N E-government indices are valuable for the comparative ranking of countries of the world according to two primary indicators: 1) the state of E-government readiness and 2) the extent of e-participation in governance. The U.N E-government readiness index is a composite measurement of the capacity and willingness of countries to use ICTs for e-governance and societal development. The U. N's E-government development index is an indicator that shows the level of E-government maturity of various countries. The index provides a valuable input for policy making and agenda setting for the future and serves as the benchmarking tool for monitoring progress of countries as they move towards higher levels of digital public-service delivery. The U.N E-government surveys does not suggest that higher rankings are necessarily a better outcome or wellness of the society being measured in terms of its technological

capabilities; rather, it is simply a measure of how governments are embracing ICTs for the purpose of good governance through efficient and effective service delivery. The E-government development index (EGDI) suggest that each country should decide upon the level and extent of E-government initiatives in keeping with its indigenous development frameworks. Schuppan (2009) had picked up on this problem when he asserted that E-government initiatives and practises should be contextual in nature and suited to the needs and capabilities of the host environment (Schuppan, 2009) .

E-government research is generally practice-oriented (Lindgren & Jansson, 2013). Hence, there is a need for close alignment of E-government theories with practice (Corley & Gioia, 2011). To effectively situate and strengthen E-government initiatives in Nigeria, the structural and institutional setting together with the socio-economic and cultural factors should be carefully considered before embarking on elaborate E-government programmes to prevent unintended outcomes (Schuppan, 2009; Fatile, 2012). E-government development and implementation frameworks in Nigeria have focused mainly on environmental and technical factors while offering very little on the need for collaborative work between different governmental Agencies. Although these factors are essential for E-government development they have not been enough for an effective development and implementation of effective E-government programmes in Nigeria.

To strengthen E-government frameworks in Nigeria, additional constructs must be examined alongside the organisational, environmental and technical factors that have been identified in E-government literatures. Holistic approach (technical and non-technical factors) must be considered jointly to explore E-government phenomenon in Nigeria with a view to develop a consensual E-government framework that is acceptable by E-government Stakeholders and suitable for adoption by the Nigerian government.

2.16.1 Illiteracy

For E-governance to succeed there must be capacity building programmes for both the citizens and government personnel especially those who would man the technology needed for E-government initiatives. Mundy and Musa stated that the knowledge of the existence and benefits of E-government would be of no use to the people if they cannot use IT equipment (Mundy & Musa, 2010). They advocated for incorporating IT education into the proposed national E-government framework at the local government levels.

Akunyili (2010) stated that in Nigeria, the government has introduced cross-sectorial initiatives to build capacity among users and support personnel. She argued that the government must place emphasis on cultural change to ensure users key into the technology because long-standing habits are difficult to change. She noted that the Nigerian government must ensure that there is consolidation of information and cross-sectorial collaboration between all tiers of government to facilitate sharing of information and resources. She further suggested that adequate E-government project design and implementation policies should be provided to achieve this objective.

Mundy and Musa (2010) explained that there is the need for government to ascertain what the citizens want and expect from their government and what they worry about. They noted that this was a valid point as many governments around the world are developing and implementing strategies for the delivery of efficient and quality services to their citizens. In achieving an effective public service delivery programme that is beneficial to the citizens, Mundy and Musa further explained that it is important for the government to examine how the public feel about the digital content of E-government beyond other things that exist such as financing, contents, and responsibilities. It was suggested that understanding the citizen's requirements and engaging them during planning, designing, and deploying of IT initiatives would make e-governance acceptable to the public.

2.16.2 Poor ICT Infrastructure

Effective E-government projects require supporting electronic devices that are web-enabled. For meaningful citizen engagement, ICT infrastructures should be affordable and accessible to the public. If the desire of government is to have an all-inclusive ICT policy that bridges the digital divide gap, then governments must intervene by formulating policies that would allow ICT infrastructure vendors to produce and supply electronic devices and peripherals at low cost to the public. Dhamodharam and Saminathan (2011) observed that the growth of ICTs in African countries has enabled observable changes in the economic, social and political developments. They noted that Nigeria is developing aspects of ICTs that has encouraged good governance but also pointed out that there exist "major loopholes which are affecting its total advancement" (2011, p.5). They cited issues of limited access to economic and social infrastructure, inadequate and costly Internet and broadband services to be among the major factors affecting Nigeria's progress in adopting E-government (Dhamodharam & Saminathan,

2011). According to Fatile (2012), the challenges of E-government development and implementation in Nigeria are well-documented. Citing Ogbomo (2009), Fatile (2012) noted that issues militating against E-government development in Nigeria is not limited to the socio-economic inadequacies alone but includes issues of poor organisation skills in the public-sector and limited human resources capital. Fatile (2012) also mentioned issues of advocacy and awareness building as a necessary requirement to evoke changes in political mind-set and culture. He argued that a major challenge for government in Nigeria is the inability to create and retain relationship with private partners in the Public and Private Partnership (PPP) projects as well as the inability to manage changes associated with transiting to digital systems from the traditional government paradigm (Fatile, 2012).

2.16.3 Lack of Government e-readiness

Wimmer *et al.*, in their article titled "The Role of Trust in E-Participation: Predictors, Consequences, and Design" stated that "citizen participation is key to a healthy democracy" (2015, p.3). While such statement can be generally accepted, one must note that citizens themselves must be ready (E-ready) and prepared to benefit from the "healthy democracy" that E-participation offers. E-readiness assessment begins with a comprehensive study of a given environment to enable E-government Stakeholders develop a reasonable view of the prevailing socio-economic and political climate. Ndou (2004) opined that E-government support facilities such as telecommunication infrastructure Networks and support structures, human resources and skills availability together with the legislative framework that are important elements that must be assessed before developing and implementing E-government projects. Adeyemo (2010) observed that E-readiness is a composite measurement of several indices which includes:

a) Web measure index: this index is based on the five-stage E-government maturity model. The models or stages all reflect a transformation that starts from the static online presence to a fully integrated and interactive maturity stage (Mundy & Musa, 2010). For countries that have established an online presence, the model defines stages of e-readiness according to the sophistication of the services provided to the public. Countries E-government ranking are determined according to the content and level of sophistication of government online portals and how the portals support critical public services such healthcare, education, transport, and the economy.

b) Telecommunications infrastructure index: this is a composite weighted average index of six primary indices based on infrastructural indicators that define a country's ICT infrastructure capacity. These are: Personal computers (PCs) per 1000 people; Internet users per 1000 people; telephone lines per 1000 persons; mobile phones per 1000 persons; and TVs per1000 persons. In 2008, a modification was made, and five indices were used to compute the index. These are Internet users per 100 persons, cellular telephone per 100 persons, broadband availability per 100 persons. The telecommunications infrastructure index is then constructed as a composite measure that assigns each variable a 20 per cent weight.

c) Human Capital Index: this is a composite of the adult literacy rate which combined primary, secondary and tertiary gross enrolment ratio with two third weights given to adult literacy and one third to gross enrolment ratio. The data for the adult literacy rate and gross enrolment were drawn primarily from the United Nations Educational Scientific and Cultural Organisation (UNESCO) and data from the UNDP Human Development Report.

2.16.4 Inadequate website contents

The works of Berelson and Lazarsfeld (1944) gave impetus to the use of content analysis as a research tool. Berelson defined content analysis as "a research technique for the objective, systematic and quantitative description of the manifest content of communication" (Berelson, 1952). Holsti (1969) identified three primary purposes for content analysis: 1) to describe the characteristics of communication, 2) to make inferences as to the antecedents of communication, and, 3) to make inferences as to the effects of communication. Krippendorff, on the other hand, defined content analysis as "a research technique for making replicable and valid inferences from data to their context" (1980, p.21). Krippendorff further identified four main advantages of content analysis: 1) It is unobtrusive, 2) it accepts the unstructured material, 3) it is context sensitive and thereby able to process symbolic forms, and 4) it can cope with large volumes of data. All the advantages recognised in content analysis technique of inquiry apply in equal measure to the online websites just as it can be applied to the print media.

The large volumes and varieties of data present on the Web create a distinct advantage that makes it rich for content analysis. The descriptive and inferential research focused on Web-based content could add value and meaning to the understanding and

appreciation of the Web which is characterised by continuously changing content (McMillan, 2000). As E-government websites continue to grow in popularity and acceptance, it has become an avenue for interactions between governments and citizens thereby making user-centred E-government programmes a growing priority for government policymakers around the globe (Heeks, 2006; Undesa, 2008; Hafkin, 2009; Diga *et. al.*, 2013; Bernhard, 2014; Ojo & Mellouli, 2016; Tassabehji *et al*., 2016).

Literature points to the growing level of government information and services going online, and more significant number of government Agencies are having the need to offer many more public services exclusively online. Government Agencies more than ever before need to design E-government portals to ensure that universal access is not only accessible but also affordable to the users of the public websites (Layne & Lee, 2001; Kaaya, 2003; Fosu, 2011; Diga *et al.*, 2013; Yıldız & Saylam, 2013; Hsieh *et al.*, 2013; Lindgren & Jansson, 2013; Ojo *et al.*, 2013; Yannoukakou & Araka, 2014; U.N, 2014; ITU, 2015; Jin & Cho, 2015). Similarly, research about E-government should embrace the idea of supporting research work that focuses on how well government websites serves the citizens rather than developing fanciful websites with vast volumes of data and information that are of little use to the visitors of such websites (Fernandez *et al*., 2011).

Usability evaluation methods (UEMs) have been used to evaluate Web applications by Information System researchers (Fernandez *et al*., 2011). However, many of these website applications fall short of meeting customers' usability expectations consequently leading to the failure of such websites as a result of not considering Web usability issues (Kaaya, 2003; Lean *et al*., 2009; Verdegem & Verleye, 2009; Fernandez *et al*., 2011; Venkatesh *et al*., 2012; Karkin & Janssen, 2014; Luna-Reyes & Gil-Garcia, 2014; Sá *et al*., 2016).

A visual inspection of many government websites in Nigeria revealed that the websites to be unidirectional in their provision of information, enabling citizens to access and retrieve government information; but not to take a more active role in co-creating contents for the websites. Nigeria could benefit from deploying public websites that can offer a variety of features that enables interaction with the public. Many E-government literature have shown examples of website designs that offer features that facilitates citizen participation and engagement (Bertot *et al*., 2008; Chen, 2010; U.N, 2010; Rorissa et al., 2011; Shareef et al., 2011; U.N, 2012; Venkatesh et al., 2012; Lampe et al., 2014; Luna-

Reyes & Gil-Garcia, 2014; Al-Hujran et al., 2015; Stier, 2015; Janowski, 2015; Guillamón et al., 2016). These websites are developed to encourage active interactions between government and the citizens. United Nations observed that citizens are no longer seen as "passive consumers of government-provided information but active participants in the related content and information generation" (2010, p.14).

Numerous opportunities for citizen interaction and participation are offered by Web 2.0 - a term that refers to web applications that facilitate interactive information sharing, interoperability, user-centred design and collaboration (U.N, 2010).

2.17 ONLINE SERVICE INDEX (OSI)

Online service index (OSI) measurement technique proposed by the United Nations Department for Economic and Social Affairs (UNDESA) is an online service index tool used for analysing the content of government websites. The online services index is one of three components of the United Nations E-government development index (EGDI). The OSI captures a country's performance in a single internationally comparable value using a five-stage-model of online service maturity measurement (U.N, 2010). The five stages according to United Nations Department for Economic and Social Affairs (UNDESA, 2008) are Emerging information services, Enhanced information services, Interactive services, Transactional services and connected approach.

Stage I - Emerging: A government's online presence is mainly comprised of an official website (homepage) with links to other Ministries or Departments such as the Department of education, health, social welfare, labour and financial services. Much of the information at this stage is static information. Visitors to the website are presented with published information and nothing more.

Stage II - Enhanced: at the 'enhanced stage' governments provide information on public policy and governance. Web-links are created to archived public information that are easily accessible to citizens. Information are in the form of for online documents, forms, and reports stored in active databases which can be accessed by the public.

Stage III - Interactive: at the 'interactive stage' governments deliver online services such as downloadable forms for tax payments and applications for various kinds of permits and license renewals. The interactive stage provides the basis for an interactive

web-portal which provides citizens with services to enhance their convenience and the ability to interact with government Agencies online.

Stage IV - Transactional: at the 'transactional stage' governments makes progress online by re-orienting and transforming itself into a governance mode that is citizen-centric. The transactional stage makes a two-way interaction between citizen and government possible. At this stage of E-government maturity, government web-portals include options for paying taxes, applying for ID cards, birth certificates, passports and license renewals, as well as other similar G2C interactions that facilitate citizen access to a '24/7' online service.

Stage V - Connected: at the 'connected stage' governments fully transform itself into a 'connected entity' that responds to the needs of its citizens by developing an integrated back-office infrastructure. This is the most sophisticated level of E-government paradigm and it's characterised by: 1) Horizontal connections (among government Agencies), 2) Vertical connections (central and local government Agencies), 3) Infrastructure connections (interoperability), 4) Connections between governments and citizens and, 5) Connections among Stakeholders (government, the private sector, academic institutions, NGOs and civil society (U.N, 2008).

While the basic model of the OSI has remained consistent over time, the initial components of the OSI have evolved due to improved understanding of E-government and improved capabilities of new technologies driving E-government practice (U.N, 2014). In 2014 data began to be collected on levels of e-participation, multichannel service delivery, provision of basic e-services, expanding usage, adoption of open data initiatives, whole-of-government and bridging digital gaps that may have existed within and between countries. Specific attention and emphasis have been on e-participation features and evidence of open data initiatives on national websites as a direct result of growing expectations about transparency and participation in public-sector organisations (U.N, 2014). Growing concerns about global warming has also necessitated the provision of environmental e-information to the OSI index alongside education, health, finance, labour and social welfare functions (U.N, 2014). The OSI index method of website inspection and content analysis is a preferred measurement technique by researchers due to its ability to capture and measurable indices that could be used in an evaluation of the maturity level of websites at a given point in time. Visual inspections of the selected

public websites was carried out by the researcher at the beginning of the research study and towards the end of the study to allow for a fair view and assessment of changes that websites might have undergone during the time taken to complete this research work.

A recent E-government study conducted by Mbanaso *et al*.,(2015) provided a detailed account that characterised what private and public organisation's web-portals looks like in Nigeria at the time this study was conducted. The study also reviewed Internet penetration and growth alongside the evolving Internet infrastructure provisioning in Nigeria. Using some of the UN online presence index methodologies that comprise of Interactivity, Web content, Currency of information, and downloadable documents it compared various sector of the Nigerian economy, tiers of government, and the academia. The study carried out by Mbanaso et al., (2015) revealed that while the organised private-sector performed well in the design, development, and implementation of online web-portals, the public-sector organisations were found to be lacking in many aspects of their websites when compared to those in the private-sector and based on international best practices (Mbanaso et al., 2015).

The online service index used in their survey was obtained by grading each website based on information and content of the website, currency of information, downloadable documents, newsletters, reports and databases that were present on the websites during inspections. Also considered were the interactive nature of the site (its ability to receive feedback from clients or customers), chat forums, the presence of online blogs, two-way communication provisions, the website's ability to respond to e-mails, language translations, and the provision of help features were carried out. The availability of the benchmark features on websites inspected was used to form an online service index used to compare the various websites and categorised according to their E-government maturity level. The maturity levels are: stage 1) website presence that contains necessary information but not frequently updated, Stage 2) Websites that are regularly updated and with downloadable materials that are current, Stage 3) Website that allows for two-way communication with users, and stage 4) websites that can function as a one-stop-hub, enabling access to all the necessary information that can be translated into various languages. An online index values of 0 to 0.25 indicates that the website is in stage one, 0.25 to 0.5 represents websites in stage two, index rating of 0.5 to 0.75 indicates that the website is at stage three, and websites with an index value of 0.75 to 1 was rated at stage four maturity (Mbanaso *et al*., 2015).

2.18 ONLINE PORTAL VARIABLE DESCRIPTION

Essential and up to date information: these types of information are provided by government Agencies to the public through various online channels of communication to create awareness on trending topics of interest. The government can also use such information to enlighten the public about government programmes and services. For the information to remain relevant and useful to the citizens, it must be kept current and regularly updated.

Downloadable forms: the website should be capable of providing electronic forms that can be downloaded in different file formats. Once downloaded, the forms can be printed and used for its intended purposes.

Newsletters and Reports: newsletters in the form of bulletins and written reports are published on government websites from time to time to inform the public about the activities of the government.

Database: this is a structured set of data that is held on the website which can be accessed by anyone visiting the website.

Interactive: this promotes two-way communication between the website and the users. Advanced government websites should be capable of accepting user input and producing a corresponding output.

Chat forums: this is a dedicated section on the website that allows users to communicate and exchange information on a specific subject of interest.

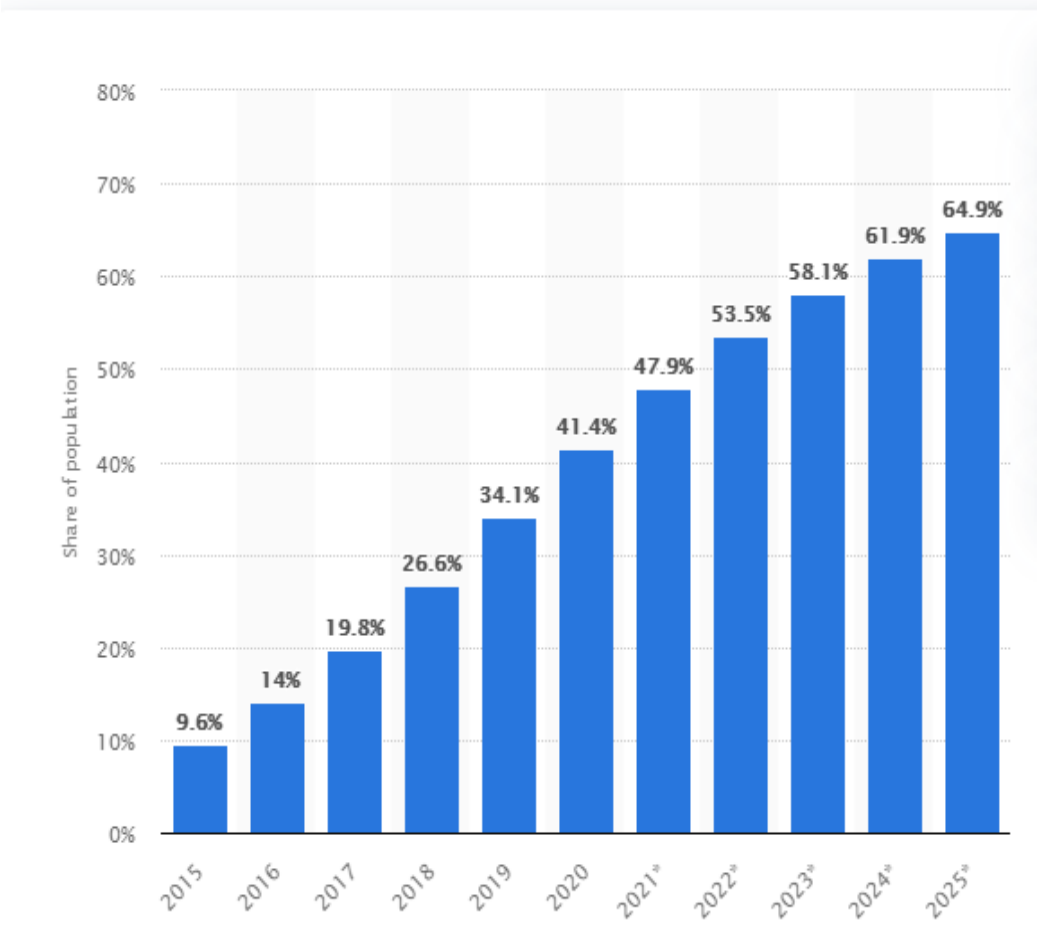
Online blogs: this is typically a webpage that contains regularly updated materials or information on specific events or topics which is usually administered by an individual or a small group of people.

E-mail provision: this refers to websites with capabilities to handle electronic mail distribution using a computer Networks from one user to another.

Language translation: this is the ability of the website to use plug-in applications that serve as language translators. Visitors to the website are able to interact with the contents of the website in the language of their choice.

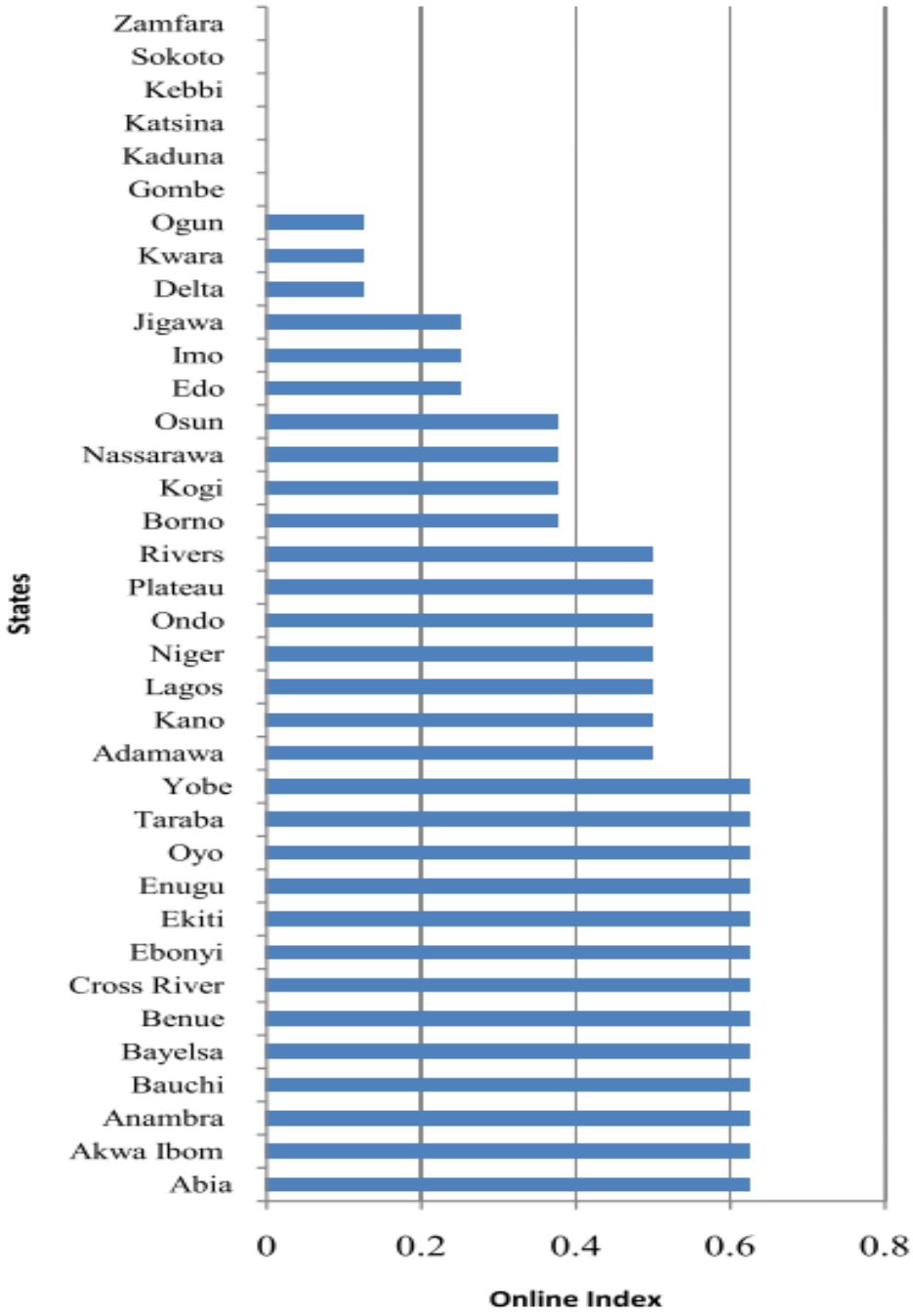
Help menu: The help menu provides a set of instructions that can be followed to navigate the contents of the websites successfully. The help menu is of use to someone new to computers, and public websites are encouraged to include help menus on their webpages.

Table 4: Mobile Internet User penetration in Nigeria (2015-2025)



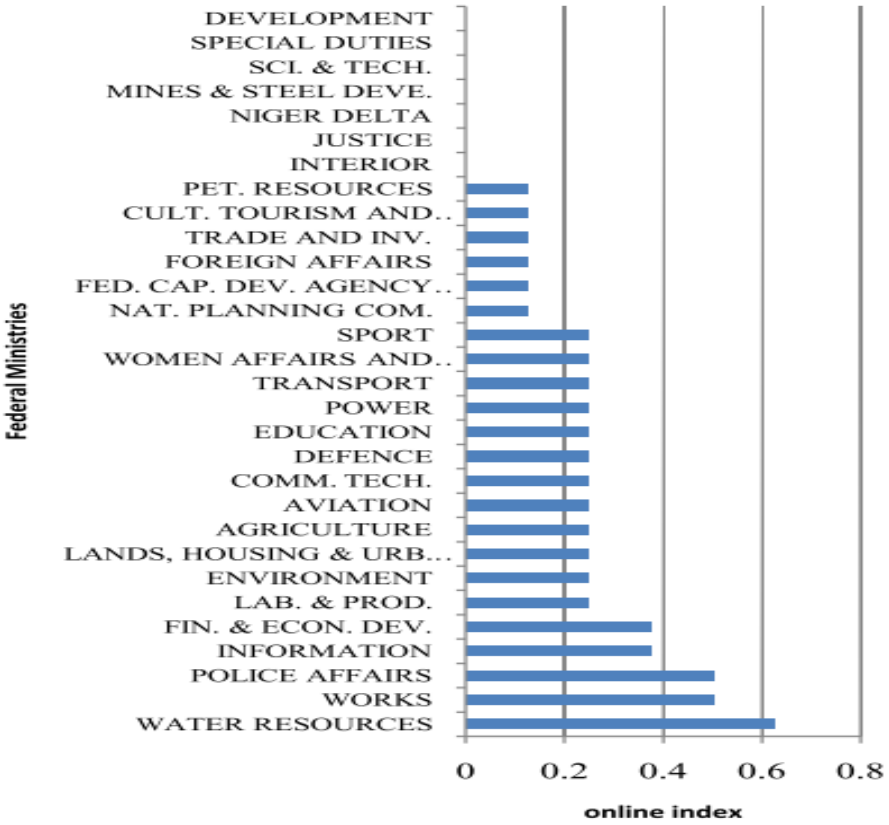
Source: Adapted from Statista (https://www.statista.com/statistics/972900/internet-user-reach-nigeria/)

Table 5: Web presence of State governments in Nigeria in 2015



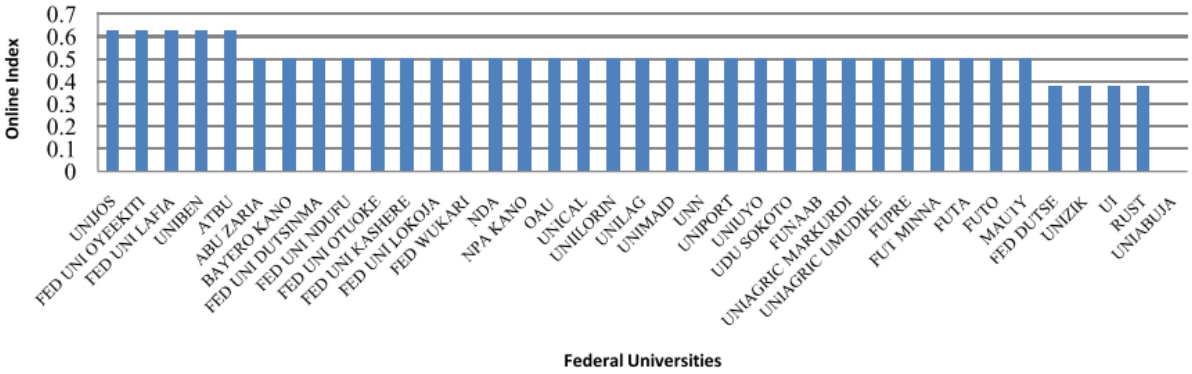
Source: Adapted from 'A Critical Assessment of Nigeria's Presence on the Cyberspace' Mbanaso et al., (2015)

Table 6: Online presence of Nigeria's Federal Ministries in 2015.



Source: Adapted from 'A Critical Assessment of Nigeria's Presence on the Cyberspace' Mbanaso et al., (2015)

Table 7: Online presence of Nigeria's Federal Universities



Source: Adapted from 'A Critical Assessment of Nigeria's Presence on the Cyberspace Mbanaso et al., (2015)

2.19 E-GOVERNMENT TRENDS AROUND THE WORLD

To buttress the argument that adaptive uses of ICTs and the Internet is creating opportunities for public services in many country and across multiple Internet-enabled delivery channels, the researcher explored e-service initiatives from selected countries around the world to showcase the relevance and benefits of citizen-centred e-government programmes and how governments around the world are leveraging ICTs and related technologies to improve the lives and livelihood of people in their various communities through cost effective and efficient public service delivery. The 2014 United Nation's E-government survey reported that despite the challenges for strategic E-government developments in Africa, advancement is being recorded in some countries. Six African nations (U.N, 2014, 2016, 2018).

The criteria for consideration in selecting countries are based on impacts and relevance the E-government initiatives is having on the society in which they are located and how such projects could be adopted by governmental authorities in Nigeria to improve E-government programmes and initiatives across functional areas of government towards enhanced online service delivery and improved relationship between government and the citizens.

Many countries around the world has continued to accelerate their online public e-services across many frontiers using all sorts of adaptive technologies (U.N, 2012; U.N, 2016; U.N, 2018). E-government projects are being developed by governments around the world to improve their public-sector services and to recalibrate systems of governance to support sustainable development. The United Nation's E-government survey of 2012 noted that "among E-government leaders, innovative technology solutions have gained special recognition as the means to revitalize lagging economic and social sectors" (2012, p.9). The U.N 2012 E-government survey concluded that governments must increasingly think about putting more emphasis on linking institutions and tiered government structures with a view to create synergy for inclusive and sustainable development thus paving way for transformative role towards coordinated and integrated governance process (U.N, 2012).

Current trends in E-government development indicated that countries are moving beyond service delivery towards a framework for smart and inclusive systems of governance. The prevailing focus is on institutional integration alongside online citizen orientation in public services. A major reason for the new paradigm of e-governance approach is the expanding nature of government e-services to reduce cost of government and at the same time achieve service efficiency. The trend towards personalisation of services is also on the rise with more countries developing and implementing online platforms on multiple channels of communication to deliver tailored and customised services to their citizens (U.N, 2012). Multiple channels of service-delivery have led to easier online access to public information and services from any location and at any time in an unprecedented manner with greater spread and diversity (U.N, 2014). Another growing trend is the use of mobile phones to access online services which has been made possible through enhanced capability and sophistication of data-driven mobile gadgets. It was reported that as of the year 2014, there were over 1.5 billion smart phones in use globally and that this number is on the rise exponentially (U.N, 2014). The United Nations in 2014 also reported that between 2012 and 2014, the number of countries offering mobile phone applications as part of their E-government initiatives to support governance doubled to about 50 different countries. Many of the government programmes began using mobile phone apps to "support poverty eradication, gender equality and social inclusion, as well as promote economic development, environmental protection and disaster management" (2014, p.8).

A recent trend in E-government approach to public-sector management is the move towards a whole-of-government (WoG) service delivery paradigm, where service delivery is offered through a "one-stop-shop" online system. According to the United Nations E-government survey data "90 countries (including over 50 developing countries) provided a link to a one-stop-shop service platforms. 105 countries provided advance search features. 98 countries require digital ID for online or mobile services, and 71 countries provide an online tracking system" (U.N, 2016, p.8). The U.N 2016 E-government survey report also mentioned that privacy statements are now available on 101 national portals, while 141 countries are now offering security feature such as 'https' and digital certificate for online services (U.N, 2016).

The integration and delivery of a range of online services through a one-stop-shop systems are not only becoming more effective in delivering economic and social services,

but at the same time aligning themselves with developments on the private and commercial sectors where the Internet and advances in capabilities of ICTs have allowed for innovative ways to enhance the value of products and services offered to the public. It must be noted that the overarching purpose of service integration and delivery using multiple channels of communication is to achieve people-centred services resulting from increasing demands from the people themselves (U.N, 2016). In support of the emerging trends in E-government where governments have to respond quickly and sometimes in a predictive sense to the behaviour of peoples or in tackling environmental issues is the use of Data science such as Big Data analytics in combination with advanced use of geospatial information system, predictive analytics for anticipatory governance, at the same time taking advantage of the Internet of Things (IoTs) to deal with complex and rapid changes in the society. Big data analytics and other forms of predictive analytics provides governments with useful tools to anticipate and approach all sorts of possible future scenarios that may occur. The United Nations believes that Predictive Analytics "is the practice of extracting information from existing data sets to determine patterns and predict future outcomes and trends" (U.N, 2016, p.34). Predictive analytics through E-government solutions can also be used to effectively manage environmental problems. It could be used to improve water management, decrease energy consumption and promote early warning and disaster management systems (U.N, 2016). The United Nations E-government Survey of 2018 focused mainly on how governments can use digital technologies to respond to unpredictable shocks resulting from disasters which could be either natural or as a result of human error. The 2018 E-government survey highlighted the growing importance of man's reliance on cutting-edge technologies such as Artificial Intelligence to manage and respond to emergency situations in times of crises (U.N, 2018). The survey acknowledged governments increasing use of open data systems, Geographic Information Systems and newer forms of technologies such as blockchain to improve E-government services.

2.20 E-GOVERNMENT IN AFRICA

One cannot say with certainty the exact time and place E-government was introduced to Africa, but its origin could be traced to the Economic Commission for Africa (ECA) summit in early 1996 when the Ministers of planning and economic development representing countries in Africa adopted the African Information Society Initiative (AISI) and recommended the development and implementation of national policies and plans to

promote E-government related activities for all regions in Africa and develop national plans and policies to promote the use of ICT in national and economic sectors of African countries (Hafkin, 2009). Although E-government has arrived in Africa, the present status of E-government services in many countries in Africa has not been well-documented (Rorissa and Demissie, 2010) except for some few researchers of E-government that have focused their research on problems facing E-government adoption in African countries (Heeks, 2002a; Kaaya, 2003; Ford, 2007; Schuppan, 2009; Ashaye, 2014). The United Nations highlighted the challenges facing E-government in Africa as mainly functional literacy and infrastructure. Researchers argued that despite recent expansions in mobile telephone, many African countries continue to lag in E-government uptake (U.N, 2012). This view was supported by Oseni et. al., (2015) after their extensive investigation on barriers facing e-services in developing countries. E-government surveys by the United Nations has shown that E-government progress in Africa remains relatively slow as compared to other regions of the world U.N.(U.N, 2014; U.N, 2016). Irrespective of the low E-government performances in Africa, commendable efforts are being made by some countries in African to accelerate their E-government programmes (U.N, 2018). The 2014 United Nation's E-government survey reported that despite the challenges for strategic E-government developments in Africa, advancement is being recorded in some countries. Six African nations (Tunisia, Mauritius, Egypt, Seychelles, Morocco and South Africa) had an EGDI score above the world average of 0.4712 placing them within the 50% leading score of the world. The 2016 UN E-government survey report showed Mauritius topping the E-government ranking chart in Africa with an EGDI of 0.6231 and ranking at 58th position among the total of the countries surveyed. Although Nigeria also improved her EGDI result in the 2016 survey, she did not manage to enter the 10 top spots in Africa.

Table 8: Top 10 most developed E-government countries in Africa.

Country	Sub-region	OSI	HCI	TII	EGDI	EGDI Level	2018 Rank
Mauritius	Eastern Africa	0.7292	0.7308	0.5435	0.6678	High	66
South Africa	Southern Africa	0.8333	0.7291	0.4231	0.6618	High	68
Tunisia	Northern Africa	0.8056	0.6640	0.4066	0.6254	High	80
Seychelles	Eastern Africa	0.6181	0.7299	0.5008	0.6163	High	83
Ghana	Western Africa	0.6944	0.5669	0.3558	0.5390	High	101
Morocco	Northern Africa	0.6667	0.5278	0.3697	0.5214	High	110
Cabo Verde	Western Africa	0.4861	0.6152	0.3926	0.4980	Medium	112
Egypt	Northern Africa	0.5347	0.6072	0.3222	0.4880	Medium	114
Rwanda	Eastern Africa	0.7222	0.4815	0.1733	0.4590	Medium	120
Namibia	Southern Africa	0.4514	0.5850	0.3299	0.4554	Medium	121

Source: Adapted from United Nation's E-government survey report of 2018

To highlight successful implementations of E-government projects around the world the researcher decided to explore E-government projects from developed and developing countries around the world. Criteria for consideration in selecting countries are based on impacts the E-government projects is having on the society in which they are located and how such projects could be adopted by Nigeria to further develop her E-government programme. The E-government projects examined range from the simple use of mobile phone small messaging services to support governance to more sophisticated use of ICTs to support government-to-citizen and government-to-businesses. Emerging economies have found adaptive ways to leverage technologies on governance to promote e-participation, reduce cost of government, and promote accountability and transparency in governance.

2.20.1 MOZAMBIQUE

The government in Mozambique is engaging citizens in its capital city of Maputo to monitor waste management using SMS and the Internet using The Service Monitoring System or Monitoria Participaiva Maputo (MOPA) as an effective E-government tool to promote a clean and inclusive society. The MOPA system is based on a software platform called Ntxuva which is designed to collect information from people using mobile phone

app, SMS, or through web portal with Internet access. The MOPA initiative is designed to "support marginalized and underserved populations in overcoming barriers to entry in the urban services sector" (U.N, 2016, p.52). According to the United Nations E-government report, the MOPA system is equipped with a voice interface in local languages to enhance access by less educated citizens of the country. The MOPA system uses data and statistics supplied by the public information about urban services to generate visualisation outputs. Individuals can add photos and textual images to the message they are reporting to allow for speedy interventions from the municipal council. To use the MOPA system to report illegal dumping of wastes, failure of waste management firms to collect waste, or inappropriate burning of garbage, the people simply need to dial *553# or online access by going to www.mopa.co.mz. The MOPA project is supported by the World bank and other donor Agencies (U.N, 2016).

2.20.2 ZIMBABWE

Through the support of the International Telecommunication Union (ITU), Zimbabwe is providing extension of Telemedicine to cover remote areas in Zimbabwe (www.itu.int). According to the ITU website, the project is aimed at providing connectivity between hospital in Zimbabwe using ICTs in order to improve the delivery of medical services across the country to address the problem of medical professional brain drain which it recognises as a critical factor. ITU explained that the Telemedicine project when completed will in addition to providing connectivity with hospitals, it will also provide assistance to the Ministry of ICTs Postal and Courier Services in the development of regulations and policies for the health-sector and help in training of manpower requirement to operate the Telemedicine facilities.

2.20.3 GHANA

The government of Ghana through the Ministry of Communication is currently implementing its GH e-Transform Ghana project (http://projects.worldbank.org). According to the information obtained from the World Bank website in 2016, the e-Transform project in Ghana is being developed to improve efficiency and coverage of the governments service delivery using ICTs. The e-Transform project is made up of four main components. The first component is to develop an enabling environment conducive for electronic government and capable of supporting businesses. The second component

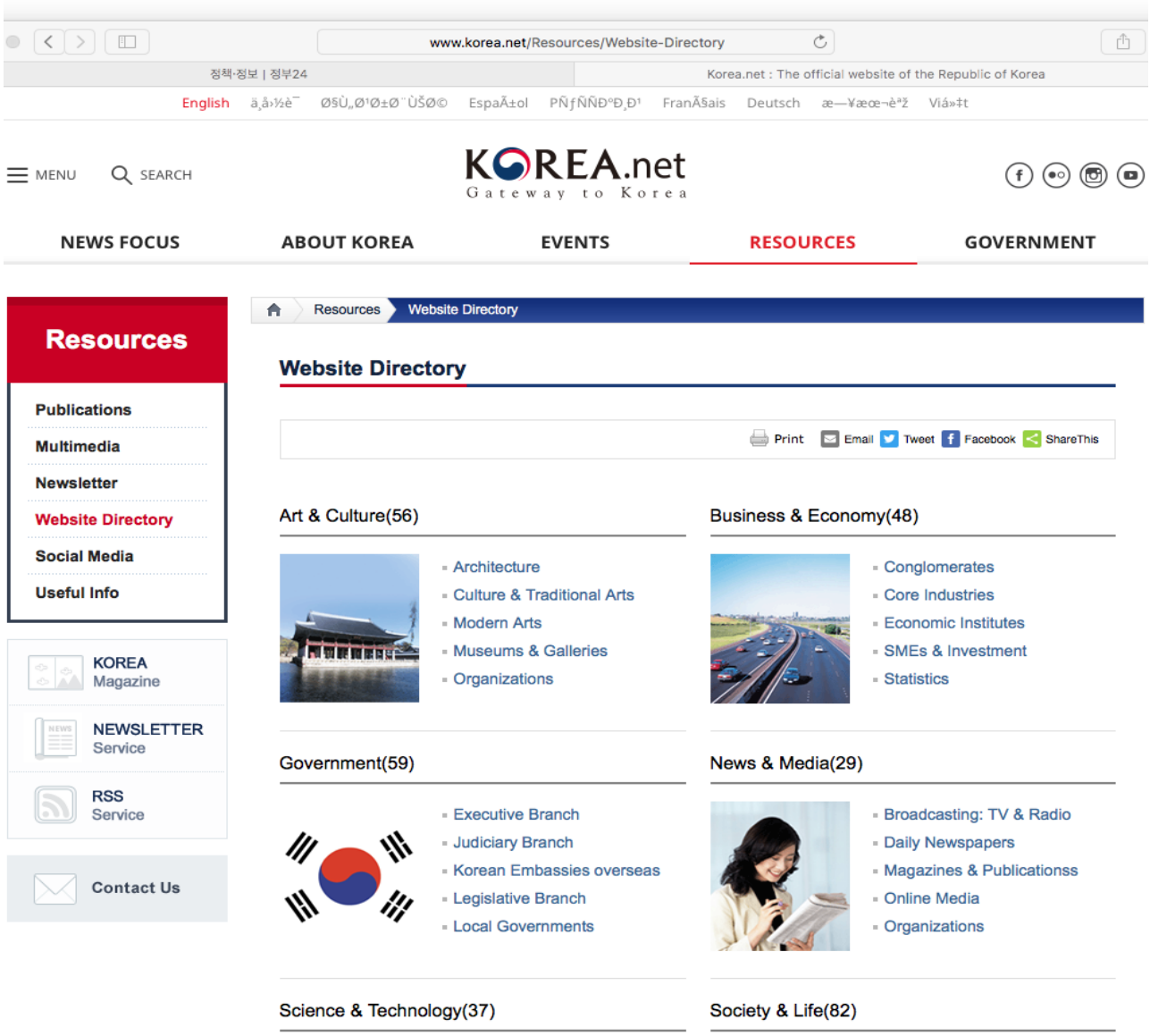
is responsible for providing support necessary for upgrading national identification systems and online verification services based on international best standards to help Ghana prepare adequately to participate in the modern e-commerce industry. The third and fourth component are targeted at scaling up of ICT applications to improve service delivery in priority sectors such as health and education. These aspects of the project are geared towards improving quality and reach of services in the health and education where the government of Ghana is lagging in achieving the United Nations recommendations as regards set targets towards reaching the millennium development goals (http://projects.worldbank.org).

2.21 E-GOVERNMENT IN ASIA

According to world-o-meter an online platform devoted to counting the population of the world real-time, Asia is the largest and most populous continent with an approximated population of about six hundred and forty-seven (647.74 million) people (www.statista.com) in 2018. Asia has a very diverse population, and this diversity is also reflected in the varying levels of online presence and E-government development programmes across Asia (U.N, 2014). Countries in Eastern Asia have consistently ranked higher in their E-government development index (EGDI) than other countries located in other regions of Asia. Southern Asia is among the least developed region in terms of online presence and EGDI rankings. Nigeria has large population size which is similar to many countries in Asia. E-government projects developed to target large population in Asian countries can be of benefit to Nigeria due similar socio-economic conditions characteristic of emerging economies.

2.21.1 REPUBLIC OF KOREA

Figure 10: Korea.net homepage



Source: Adapted from the official Internet homepage of The Republic of Korea (www.korea.net)

The republic of Korea has highly developed and integrated Internet portal which provides access to multiple services where individuals can find almost every kind of service they desire. The Korea.net portal is a gateway into Korea where visitors can access all sorts of information ranging from government services to private events. The Korea.net website is divided into various themes and subjects that caters to the needs of diverse audience.

According to an online newspaper (The Nigerian Observer, 2015) article titled: “Developing E-government Capacity in Nigeria Using the Korean Prototype”, the

publisher reported that Mobolaji Johnson (former Nigeria Minister of Communication) while narrating the Republic of Korea's E-government experience mentioned that Professor. Soung Kim, the Chairman of South Korea's E-government Research Centre had said that his country's E-government project started in the 1960s as part of the office automation for statistical analysis in the Economy Planning Board. He was reported to have said that the early introduction of computers into public-sector services had played a major role in the development of E-government in Korea. He explained that in 1977 it was found that computers had greatly facilitated efforts to produce fast and accurate results in simple arithmetic tasks such as payroll and personnel management, calculations for phone bills, grading tests, among other day to day transactions. The faster process of achieving routine daily tasks that involved mathematical computations using computers had greatly motivated government officials in Korea to explore the use of computers in delivering fast and efficient public services to the citizens. Professor Kim further observed that laws such as Computer Programme Protection Act, Supply and Utilisation of Computer Network Act, Software Development Promotion Act, and Framework on Informatisation Promotion Act were enacted by the Korean government to advance the development of E-government in the Republic of Korea. He narrated that in September 1993, the term "E-government'' first appeared in official documents in Korea, adding that the period between 1993 and 1995 marked a turning point in the government's efforts to develop e-governance in the Republic of Korea. He said that during the period the Ministry of Information and Communication was established an important objective of the ministry was to spearhead the implementation of the E-government projects that are being developed within the country.

Kim said that full-scale implementation of the E-government project began in 2000, while in 2001, Korea passed the first legislation on E-government — Promotion of Digitalisation of Administrative Work for E-government Realisation Act. In 2001, detailed plans for the implementation and funding of the E-government projects were drawn up and the participatory government was inaugurated in 2003 resulting in 85per cent increase in online transactions in the public services. The Republic of Korea is constantly modifying its E-strategy to accommodate emerging trends in both public-sector operations and new technologies. Its strategy embraces all aspects of modern E-government programmes and technological innovations. Professor Kim was reported to have noted that South Korea had completed the first and second phases of the E-government programme and had entered into the third stage of its E-government

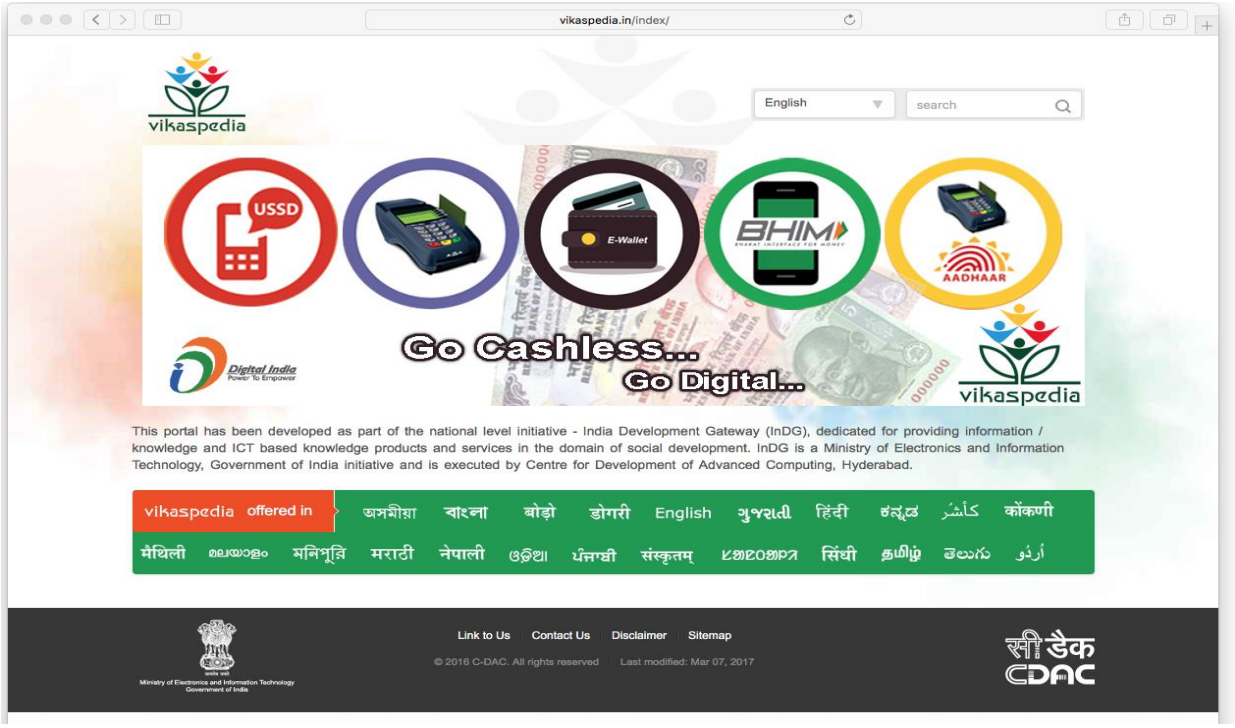
programmes popularly tagged “e-gov. 3.0”, aimed at providing customised services for individual citizens, while supporting job creation, creative economy and removing perceptible barriers to good governance. Professor Kim concluded his remarks by making projections that the digital business in the Republic of Korea is expected to continue growing. According to an online Nigerian Newspaper, it is widely believed that digital businesses in the Republic of Korea is expected to create markets worth up to 309 billion U.S. dollars (about N61.8 billion) for technology products and services by the end of year 2020(www.nigeriaobservernews.com)

The United Nations observed that the huge progress in development and implementation of downloadable mobile applications across multiple platforms is reported to be a major contributor to the significant growth of E-government in the Republic of Korea (U.N, 2012).

Nigeria can imitate the Republic of Korea’s E-government initiatives by embarking on long-term sustainable E-government projects that adds value to the lives of the citizen and promotes better interaction between government and the public.

2.21.2 INDIA

Figure 11: Homepage of India Development Gateway



Source: adapted from C-DAC, 2016 (https://www.cdac.in).

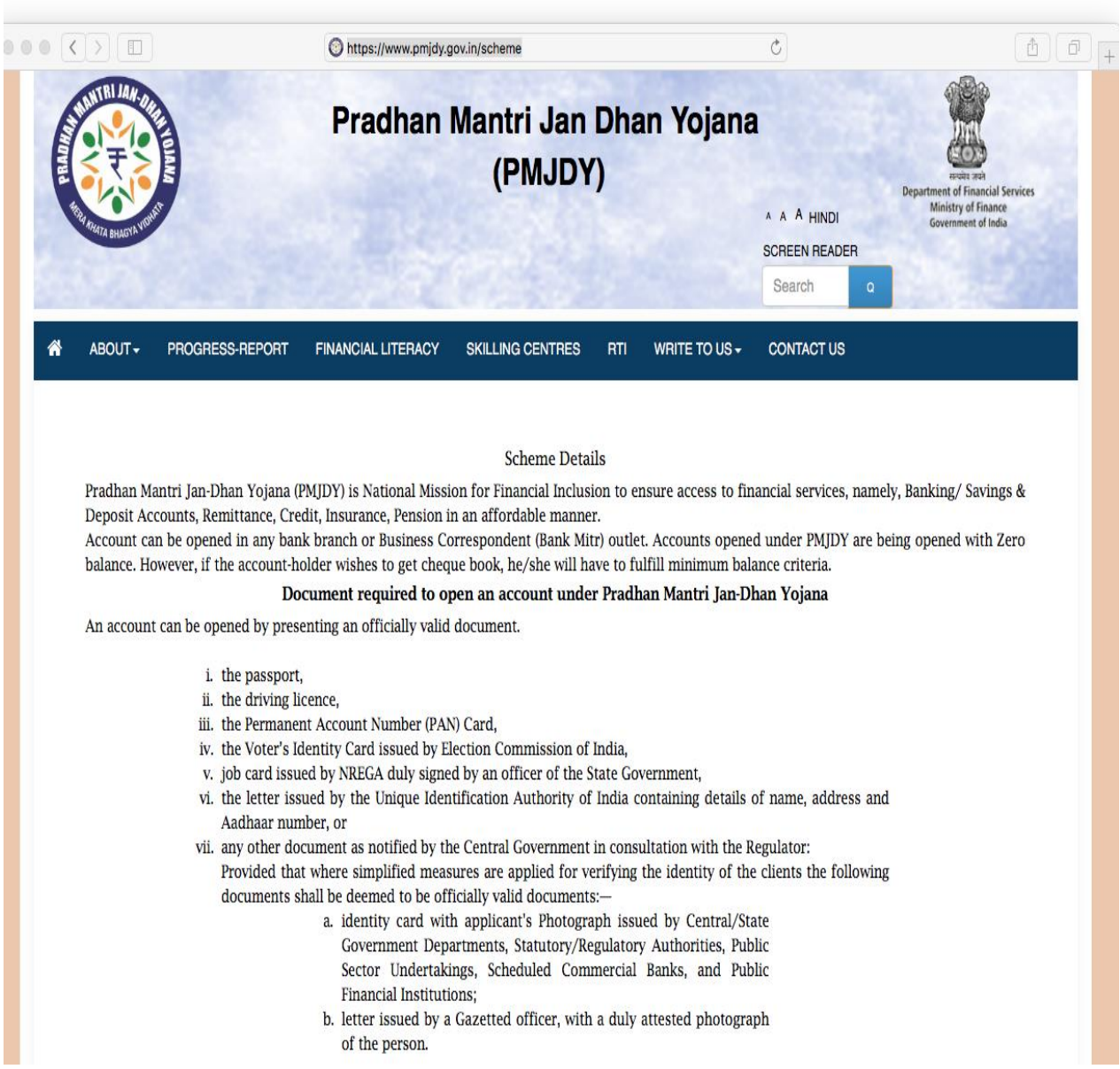
The India Development Gateway is an additional web portal to complement India's national web portal. The India Development Gateway portal is developed to provide a single-window access to public information and services specifically targeted at hard-to-reach segments of the vast India population (U.N, 2012). The portal provides information aimed at specific groups in rural areas such as farmers. It provides guidance on how people living in remote parts of India can access rural energy. There is a specific section on the India Development web portal known as "ask the expert" – a forum for providing useful information and discussions on specific topics of interests. According to the U.N E-government report, The India Development Gateway has an "objective to stimulate women, the poor, and people in the remote rural areas to use technology to their own advantage" (U.N, 2012, p.25). Other notable E-government initiatives of the government of India includes Open Government Data Platform (https://data.gov.in) which provides national policies relating to data sharing and accessibility, government policies on Open Application Programme Interfaces (Open APIs), and Common Service Centres (CSCs) and the Public Internet Access Programme providing G2C services in rural areas are jointly deployed to deliver wide range of public services to the citizens (http://www.csc.gov.in/).

Figure 12: Website of the Common Service Centres Scheme in India

Source: adapted form www.csc.gov.in

Jan DhanYojana is an online financial service of the Indian government that provides massive programme on financial inclusion with a target to enable at least one bank account in each household, and each savings account holder in each household to have insurance facility (https://www.pmjdy.gov.in/scheme).

Figure 13: Website for the PMJDY government financial scheme of India



Source: www.pmjdy.gov.in

The DigiLocker is an online platform with facilities for government and other Agencies to send and verify electronic documents of citizens, storing legacy government certificates and documents anywhere and anytime (https://digilocker.gov.in/).

Figure 14: DigiLocker Website homepage

Source: adapted from: www.digilocker.gov.in

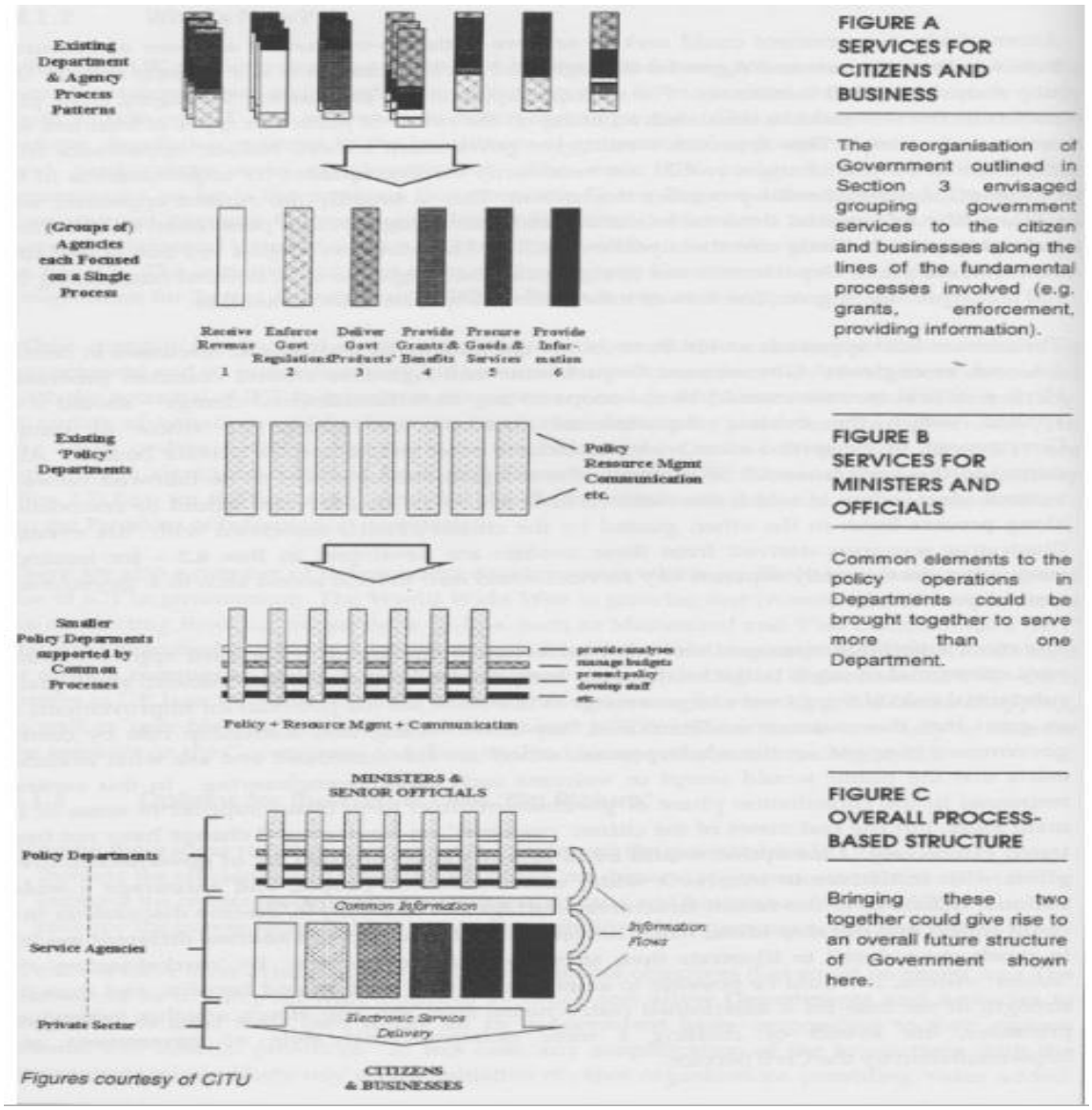
2.22 E-GOVERNMENT IN EUROPE

The United Nations E-government survey explained that "Europe as a region has been in the vanguard of information technology and setting the pace for others to follow" (2012, p. 29). The above statement can also be taken as an indication for the reason why so many E-government researchers and their research outputs are found in Europe (Heeks and Bailur, 2007). Rogers diffusion of innovation (1995) which was later adopted in E-government for research on adoption and diffusion of E-government provided an impetus for the rapid growth of E-government in Europe (Zhang *et al*., 2014). Al-Hadidi and Rezgui (2010) observed that because information technology and information systems innovation are central to E-government adoption, the issues of "diffusion" especially in technology and its applications are considered important elements for E-government success and ratings. Literature have demonstrated that E-government practises have been well-developed and adopted in many countries in Europe.

2.22.1 E-GOVERNMENT IN THE UNITED KINGDOM

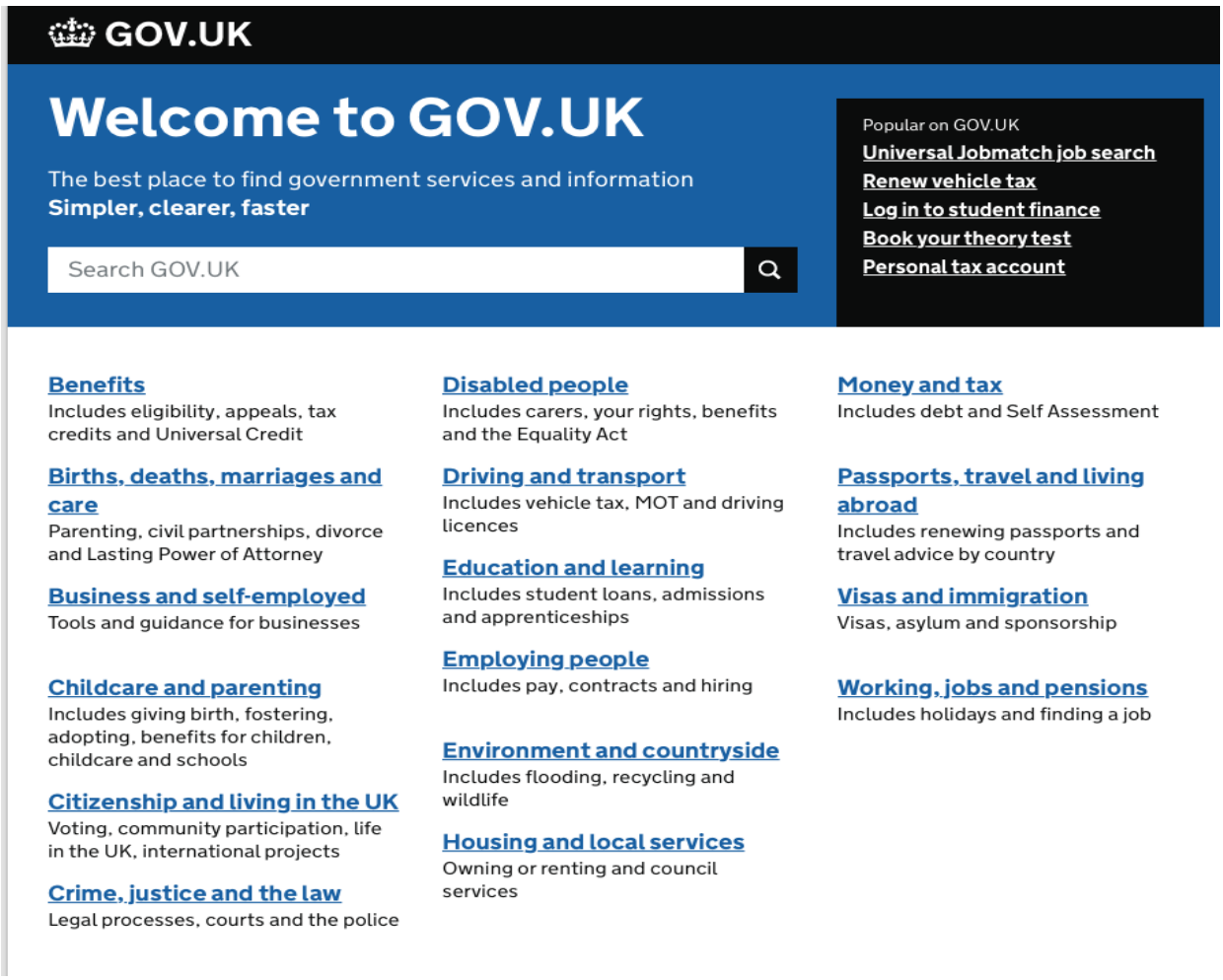
Fishenden (2015) narrated the Uk government's journey toward an E-government paradigm that uses a platform-based architecture (www.ntouk.wordpress.com). He observed that he first came across recorded effort of The Parliamentary Office of Science and Technology (POST) that considered the "impact of technology on government and all of its services in a more holistic way" in 1998. He said that POST's report on "electronic government" included schematic as part of its discussion on common processes across government. The common services framework was designed around two core service paradigms and a single overall process-based structure: 1) Services for citizens and business, 2) Services for Ministers and Officials, and 3) Overall process-based structure. Fishenden explained that the UK government's architectural approach to development of joined-up services was set out in the 1999 in the "Portal Feasibility Study"- a report prepared by the Central IT Unit (CITU) in the Cabinet Office. He observed that a three-tier architecture was proposed by CITU and designed to support a wide range of access channels that will facilitate easy integration of existing government IT estates. The UK government provides electronic public services to the citizens through the Government Gateway known as GOV.UK website. The GOV.UK website is designed to be simpler, clearer, and faster to use.

Figure 15: The 1998 view of common services.



Source: adapted from www.ntouk.wordpress.com

Figure 16: The UK government official webpage (GOV.UK).



Source: Adapted from the official Uk government homepage (.gov.uk)

The 2016 E-government survey by the United Nations awarded the United Kingdom and North Ireland the top position in online service index (OSI), placing the UK as the country with the highest-ranking E-government index in 2016 on the E-government ranking and rating of countries. In awarding the top spot to the UK in 2016, the United Nations observed that "in the last decade, the UK government worked continuously to establish the needed infrastructure; and secure government gateways, interoperability standards, authentication and broadband availability, while also deregulating the telecommunications sector" (U.N, 2016, p.83).

Table 9: Top performing countries in Online Service Index (OSI), 2016.

Country	Online Service Index OSI
United Kingdom of Great Britain and Northern Ireland	1
Australia	0.9783
Singapore	0.9710
Canada	0.9565
Republic of Korea	0.9420
Finland	0.9420
New Zealand	0.9420
France	0.9420
Netherlands	0.9275
United States of America	0.9275
Austria	0.9130
Spain	0.9130
Estonia	0.8913
United Arab Emirates	0.8913
Sweden	0.8768
Japan	0.8768
Italy	0.8696
Israel	0.8623

Source: Adapted from United Nations e-government survey, 2016.

2.23 CRITICAL APPRAISAL OF THE LITERATURE REVIEW

Literature on the growing phenomenon of E-government and innovations within the public-sector services has continued to expand in volume and categories in recent years. This expansion has seen E-government research grow in both form and substance over the years. The growth in E-government studies has led to E-government research journals consistently published in research outlets such as the Government Information Quarterly, Telecommunication Policy, Technological forecasting and Social change, Computers in Human Behaviour, Conference proceedings for the European Conference on E-government, Information Polity, and E-government survey reports of the United Nations Department for Economic and Social Affairs to mention just a few.

The multidisciplinary nature of E-government is reflected in the "definitional vagueness"(Yildiz, 2007) and "theoretical fragmentation" (Heeks and Bailur, 2007; Yildiz, 2007) within the research discipline, and is often reflected in how researchers have used varieties of established theories from other disciplines to study and explain E-government phenomenon (Bannister & Connolly, 2015; Meijer and Bekkers, 2015). Scholars have pointed to the methodological weaknesses (Heeks & Bailur, 2007) and the absence of theoretical rigour (Yildiz, 2007; Bannister and Connolly, 2015) as factors that limits E-government studies as a research discipline. Although the assertion of E-government's 'definitional vagueness' and 'theoretical weaknesses has been strongly disputed by Bannister and Conolly (2015).

The approach to E-government studies have been very diverse and have followed multiple trajectories ranging from Information Systems (IS) perspectives to the New Public Management paradigms with researchers importing theories from their native disciplines into E-government research.

There have been remarkable disparities in the approach to E-government architecture, designs and development and its level of adoption varies between countries across the globe. The level and details of E-government development, adoption and use is often reflected in the level of technological, organisational, and environmental advancement of the host country. While many emerging economies around the world still find themselves at the lower end of E-government development and implementation, advanced economies have continued to explore and develop higher forms of E-government initiatives using disruptive and cutting-edge technologies to push the boundaries of ICT-enabled public-service delivery (U.N, 2016; 2018).

E-government conceptual issues

A major challenge to E-government research, development and implementation is the lack of consensus on E-government core indicators, common definitions and theoretical frameworks that could guide a universal approach to E-government studies. E-government researchers and practitioners continue to approach E-government study and practise from different philosophical backgrounds and research perspectives. Over the past two decades scholars have proposed varying definition and concepts of E-government (Grönlund & Horan, 2005; Bannister & Connolly, 2015). While Gartner (2000) cited in (Fang, 2002, p.3) broadly defined E-government as "the continuous optimisation of service delivery, constituency participation and governance by

transforming internal and external relationships through technology, the Internet and new media"; The world Bank defined E-government as "the use by government Agencies of information technologies (such as Wide Area Networks, the Internet, and mobile computing) that can transform relations with citizens, businesses, and other arms of government" (The World Bank, 2015). Heeks and Bailur observed that "E-government can be seen as sitting at the crossroads between computer science, information systems, public administration, and political science" (2007, p.10). The opinions of Heeks and Bailur reinforces the lack of consensus amongst E-government researchers about a clear definition and a guiding theoretical framework for which E-government as a research discipline could be based. Although E-government literature have suggested varying forms of E-government definitions, a common thread that runs through the varying definitions is that E-government entails the use of the Internet, ICTs and related technologies to enhance and promote public-service delivery in a transformative way to the benefit of the citizens and businesses.

To realise the inherent benefits of E-government, public administrators should emphasise designing quality E-government systems that have the capability of making information not only accessible, but a rewarding experience for the users.

Grönlund a leading critique of E-government research once said that: "A scientific field is usually characterised by not just a common object of study, but also a set of theories which can be used to understand the general conditions of the field" (2004, p.178). He concluded that theory generation and testing was "not frequent" while questionable assertions were common among E-government researchers.

Bannister and Connolly (2015) explained that a good theory can help explain and assist understanding of a subject, and that the best theory can be used to predict how a given set of initial conditions are likely to evolve. The onus is on the researcher to evaluate the merits of various E-government theories and concepts that are available and settle for the one that can help in achieving the aims of his research and to successfully answer the research questions.

With the availability of multiple paths to E-government studies, I have deliberately chosen to use a framework-based approach that suits the purpose and intentions of this study. The Framework-based method mainly uses frameworks that are derived explicitly from a body of theoretical work. This include frameworks of various perspectives on E-

government theories and models derived mainly from the four-part Web stage model of E-government first proposed by Layne and Lee in 2001. This model presented an E-government model evolving through four stages of development as their integration, technological, and organizational complexity increased (Layne & Lee, 2001). Other well-known E-government models are UN and ASPA Model (2002), The Public-sector Process Rebuilding (PPR) Maturity Model (2006), and the eGovernment Maturity Model (eGov-MM) (2011).

Apart from E-government issues on theoretical frameworks and models, there is the issue of E-government indicators and their measurement. To mitigate the problem of disparate E-government measurement indicators, a policy framework for a unified set of core E-government indicators was proposed by the Task group on E-government (ITU, 2011; ITU, 2015). In addition to the TGEG core indicators, there are E-government indicators proposed by West (2007) and those of the United Nation known as E-government Development Index (Nations, 2010).

For the purpose of this research, some of the E-government core indicators have been classified into four areas mainly: use of ICT by employees of government (for example, use of computers), availability of ICT to government organisations (for example, the Internet), use of ICT by government organisations (for example, whether a website exists), and the supply of E-government services to citizens.

The choice of E-government measurement index in this study is informed by the nature and purpose of the research that is being conducted.

Good governance

According to the United Nation's E-government survey report of 2016, 'good governance' entails the overall management of a country's resources including its people by public administrators in an inclusive and transparent way that promotes effective and efficient public administration and acceptable service delivery which cuts across all tiers of government and benefits the general populace. In recognising the need for good governance, the United Nations' 2030 agenda for sustainable development acknowledged that good governance and the rule of law alongside an enabling environment at national and sub-national levels are essential for sustainable development. This includes sustained and inclusive economic growth, social development, environmental protection and the eradication of poverty and hunger (U.N, 2016). This definition of 'good governance' by the United Nations agrees with the definition earlier described by Basu (2004) who

argued that the objectives of e-governance are similar to the objectives of good governance which can be seen as an exercise of economic, political, and administrative authority to better manage affairs of countries at all levels of governance. Furthermore, good governance involves processes and structures that guide political and socio-economic relationships; with particular references to commitment to democratic values, norms and practices, trusted services, and honest business (Savic, 2006).

By using electronic means to provide access to public information and service delivery which may include online consultations and feedbacks, government supports and encourages E-participation which in turn stimulates good governance. Citizen engagement and participation are essential to achieving good governance and wider the socio-economic goals of nations. While good governance is desirable to every government, it has not been the case in many countries around the world; most especially in developing nations (Heeks, 2002b; Schuppan, 2009; U.N, 2014; Aladwani, 2016).

Problems associated with poor governance are often related directly or indirectly to issues related to poor leadership, corruption in government, lack of adequate social and economic programmes, inadequate technological infrastructure and inadequate regulatory frameworks and government policies (El-Haddadeh *et al*., 2013; Krishnan *et al.*, 2013; Meijer, 2015; Henninger, 2017). Newer opportunities made possible through use of ICTs in public-sector organisations offers practical ways to tackle some, if not all the problems associated with poor governance.

Although ICTs can provide an effective and efficient means to solving some of the 'wicked problems' in the society, the complexity associated with E-government systems challenges its efficacy as a transformational mechanism for improving public-sector service delivery in many developing countries (Seifert, 2003; Lau *et al.*, 2008; El-Haddadeh *et al.*, 2013). E-government literature suggests that many developing countries still grapple with technical issues ranging from poor technical and deficient ICT infrastructure necessary for E-government development and implementation, to problems associated with poverty, illiteracy, and lack of visionary and committed leadership (Millard, 2015; Choi *et al.*, 2016). Irrespective of the daunting challenges, extant literature on E-government shows that Information and Communication Technologies are playing significant roles in enhancing efficiency and increasing productivity in the public-sector services in many emerging economies around the world including Nigeria; and in the process creating transformational changes in the public-sector organisations (Zhang

et al., 2014; Janowski, 2015; Tassabehji *et al.*, 2016; Weerakkody *et al.*, 2016). Recent studies have shown that significant number of governments in African countries including Nigeria are not only leveraging on E-government to promote good governance in the context of its adoption and use, but also making use of E-government to strengthen relations among their citizens in a progressive and positive manner (U.N, 2014; U.N, 2016; Verkijika & Wet, 2018).

In summary, e-governance helps to promote good governance in the sense that it allows governments to leverage on the potentials of ICTs to improve information and service delivery to the general public, to promote citizen inclusion and participation in governance through value co-creation and decision-making processes, to promote accountability and transparency in government, and to promote efficiency and effectiveness of public-service delivery (U.N, 2008, 2012, 2014, 2016; Agangiba, 2013).

E-government contextual issues

E-government has continued to receive broad acceptance as an innovative method for improving governance (Arduini *et al.*, 2013; Choi *et al.*, 2016). However, innovation in government is not only a matter of implementing technical changes facilitated by modern ICTs deployment within public-sector services, but it must include profound and far-reaching transformations in organizational structures and the broader socio-economic environment (Fountain, 2006; Arduini *et al.*, 2013; Zhang, Luna-Reyes and Mellouli, 2014; Tassabehji, Hackney and Popovič, 2016a).

Literature explains that E-government though useful in creating a paradigm shift in the delivery of public-sector services through the innovative use of ICTs and the Internet, transformational changes in government activities are continuous processes (Olumoye & Govender, 2018) that should develop in line with the economic and socio-technical realities of each country (Heeks, 2002a; Heeks and Bailur, 2007; Schuppan, 2009). The socio-technical nature of E-government suggest that E-government as a research discipline will need to be addressed with careful attention to context (Seifert, 2003) as the contextual nature of counties can lead to E-government difficulties if not placed in the proper perspective and within the realities of the host nation (Heeks, 2002a; Schuppan, 2009). The disparity among nations vis-à-vis their sociocultural orientation, political systems, and level of development with regards to technologies and allied infrastructure

necessitates that this research is put into the proper context; that of using technology for public-service delivery in an emerging economy. Consequently, the investigation of factors impeding and promoting E-government development in Nigeria was conducted in line with the prevailing cultural, technological, organisational and environmental realities and context between 2013 and 2018.

Extant literature on E-government consistently argued that effective E-government development and implementation depends largely on contextual factors based mainly around issues of technological capacity and capabilities, organisational arrangements, and environmental realities of nations intending to adopt E-government systems (Olumoye and Govender, 2018; Veeramootoo *et. al.*, 2018). Apart from the technological, organisational, and environmental factors necessary for developing E-government, Scott (2007) identified other factors influencing E-government development and implementation to include issues around economic conditions, legal and political power, security, and issues of trust. Ashaye and Irani (2013) argued that barriers of E-government development and implementation ranges from issues of change management, economic constrictions, to issues around socio-cultural setbacks and technical competencies. Fatile (2012) specifically pointed to lack of collaboration among governmental sectors as a major hinderance to E-government implementation in Sub-Sahara African countries which includes Nigeria. Collaboration between different governmental MDAs across and between organisational boundaries is often referred to as a Whole-of-Government (WoG) approach to governance. According to Christensen and Lægreid the Whole-of-government concept refers to "public services Agencies working across portfolio boundaries to achieve a shared goal and an integrated government response to particular issues" (2006, p.9). Citing Ojo *et al.*, (2011) the United Nations Department of Economic and Social Affairs (UNDESA) defined Whole-of-Government as "Agencies working across portfolio boundaries to jointly achieve integrated responses to the issues of policy development, program management and service delivery" (2014, p.75). WoG is useful in connecting individuals and government systems in an integrated approach leading to online service delivery through a "one-stop-shop" web portal system. (U.N, 2016). Ansell and Gash (2008) suggested that while Information Communication Technologies (ICTs) are increasingly used to facilitate a whole-of government approach within various governmental organisations and works across organisational boundary lines to provide inter-organisational platforms for collaborative participation among different

governmental Agencies, more needs to be done to understand how consensus is built and reached among E-government Stakeholders.

Analysis of government organisations across various tiers of government in Nigeria revealed that government MDAs mostly exist in silos with little or no cross-agency collaboration between government Departments. Without a functional government inter-agency information Network (GINs) underpinned by effective Networking processes and cross-agency collaboration, E-government system is bound to fail.

Gap identified in the literature

While recent studies have shown that significant number of governments in African countries are not only leveraging on E-government to promote good governance in the context of its use and adoption, but also using it to strengthen relations among their citizens in a progressive and positive manner (U.N, 2014; U.N, 2016; Verkijika & Wet, 2018), there continues to exist opportunities for emerging nations to do more in embracing inclusive governance that are increasingly made possible through use of modern technologies (Scholl and Luna-Reyes, 2011; Gulati *et al*., 2014).

Survey evidence from the 2018 U.N E-government survey report showed that Nigeria had scored a low EGDI of 0.3807 compared to its highly populated peers in developing economies around the world (U.N, 2018). The consistently low EGDI score by Nigeria necessitates an empirical investigation to identify factors that are affecting E-government development in Nigeria.

The question about the quality of Nigeria's E-government frameworks identified in extant literature raises concern about its suitability to implement viable E-government projects that are beneficial to the citizens and helpful in raising Nigeria's E-government ranking and ratings. Existing E-government frameworks for Nigeria identified in literatures shows that important E-government constructs such as Networking process, cross-agency collaboration, and Interoperability frameworks for government information Networks are missing from E-government frameworks previously develop for use in Nigeria. This research aims to address the gap identified in literature and to extend previous E-government frameworks in Nigeria with the additional elements of Network processes and cross-agency collaborative participation in the public-sector institutions in Nigeria. The researcher is confident that the outcome of the research will not only identify factors

impeding and promoting E-government development in Nigeria, but also lead to the development of a new E-government framework that will be useful in improving E-government practise in Nigeria and subsequently raising Nigeria's EGDI score in future U.N. E-government surveys.

2.24 CONCLUSION

Irrespective of the many factors impeding E-government development, countries seeking transformational public-sector changes stand to gain by implementing a whole-of-government approach towards governance. These include realistic improvements in accountability and transparency within the public-sector services, reduction in corruption and cost of delivering public-sector services, improved coordination among governmental MDAs, and improved relationships between government and the citizens through inclusive and collaborative participation in governance.

This chapter has reviewed relevant E-government literatures and documents within the public domain in Nigeria and from other E-government publication outlets. The chapter briefly reviewed issues concerning technology and social change, Digital Era Government, ICT-led virtual organisations, Knowledge Society, and Knowledge-based economy. The chapter also briefly examined the history of the Internet and discussed the concept of the Internet of Things (IoTs). Chapter two also provided a brief review of the issues relating to the digital divide, Open Government and Open Government Data (OGD) and the concept of Whole-of-Government (WoG) and Citizen-centric E-government. The chapter discussed issue bordering on E-government definitions, theories, measurement metrics, concepts and maturity models of E-government, E-readiness and E-participation.

Chapter two explored E-government experiences in Nigeria and in selected countries around the world. The chapter concluded with an appraisal of extant E-government literature and highlighted the gaps in the literature with respect to E-government frameworks in Nigeria. The literature review identified the current debates in E-government with respect to current development and prospects. It examined the opportunities and challenges of adopting E-government to facilitate public-service delivery at various levels of government and at varying degree of sophistication and complexity.

CHAPTER 3

RESEARCH CONCEPTUAL FRAMEWORK

3.0 INTRODUCTION

Although there have been many researches on E-government concerning its development, implementation and practice in the Western world, there has not been very many works of literature on E-government frameworks and model designed for use in the public-sector service in Nigeria. Extant E-government literature provided insight into a few E-government frameworks that are specific in context to Nigeria and were examined during this research work. Although original in concept, the E-government frameworks were mainly descriptive and did not arise from empirical evidences, nor claimed to be consensual among E-government Stakeholders in Nigeria. The non-empirical nature of the E-government frameworks identified in literature makes them limited in scope and capabilities and therefore do not adequately address broader issues of E-government implementation in actual practice in Nigeria. There is need for further studies and extension to E-government frameworks that were identified in literature.

Mundy and Musa (2010) proposed an E-government framework suited for government at State-level implementation. Their framework proposed that any formulation of policies, laws, and strategies for E-government implementation must be sourced at the federal government level. They suggested that there must be specific drivers for the formulation of E-government laws and policies which must originate from the government. On the other hand, Richard Ashaye (2014) in his conceptual model of E-government, refined the E-government framework proposed by Mundy and Musa by incorporating E-government internal and external factors such as political, economic, legal, leadership, and financial matters. He also included other factors such as Barriers, Risks, Good Practice, and Key actors in his conceptual model of e-governance. Ashaye explained that in exploring institutional theory, his framework allows for the wider application of Information Systems and Information Technology context as it helps researchers to explain why formal security structures should be created and maintained by organisations.

3.1 RESEARCH FRAMEWORK CONCEPTUAL DISCOURSE

The research conceptual framework has been developed in line with findings from the literature review and is underpinned by the Technology-Organisation-Environment (TOE) theory developed by Tornatzky *et.al.*, (1990), the Networking processes (O'Toole, 1997; Bardach, 2002; Guha and Chakrabarti, 2014; Ojo and Mellouli, 2016) and Cross-agency collaborative process (Luna-Reyes, Gil-Garcia and Cruz, 2007; Ansell and Gash, 2008; Yang, Pardo and Wu, 2014; Gil-Garcia and Sayogo, 2016a; Ojo and Mellouli, 2016; Juell-Skielse, Lönn and Päivärinta, 2017). The research conceptual framework guided the entire research and provided the basis for explaining and linking the variables of the research with the concepts, theories, and empirical research that were used to systemise the knowledge espoused by the researcher.

The researcher investigated factors facilitating and impeding E-government in Nigeria through the lens of the TOE theory together with the 'Network process' and collaborative theories in public-sector organisations. The rationale for using TOE theoretical framework is that the framework captured three key factors namely technology, organisation, and environment which are necessary and vital to the development and implementation of technological innovation within the public-sector organisations. ICTs are recognised in literature to be construct of technology which provides the backbone of an integrated framework for implementing the whole-of-government (WoG) approach to governance. The organisational context provides the umbrella necessary for innovative ICT implementation in organisations, while the environmental context provides the explanation for the surrounding conditions that influences both technology and organisation in carrying out their functions.

The 'Network process' describes a complex mix of Stakeholders with similar interests working together in coordinated manner towards Network policy development and implementation of common Network goals and objectives. Although there exist different kinds of Networks which serve different interests, this research work refers to Network types that are organised by the government to use both State and non-State resources and capacities to advance and pursue public goals and interest with the aid of Internet-enabled ICTs. This Network paradigm is usually referred to in ICT literature as Government Information Networks (GINs) (Janowski *et al.*, 2012). The Network process explored in

this study was limited to the necessary Network elements required in the formation of public services described in details by Guha and Chakrabarti (2014).

The rationale for the Collaboration theory is collaborative governance aims to encourage citizens engagement and inclusion to promote good governance and improve institutional structures using ICTs (Kapucu *et al.*, 2012). Gil Garcia (2012) described cross-agency collaboration as ways government Agencies could work and share databases and information across organisational boundaries. The concept of collaborative governance underpins E-government studies and is central to this research enquiry.

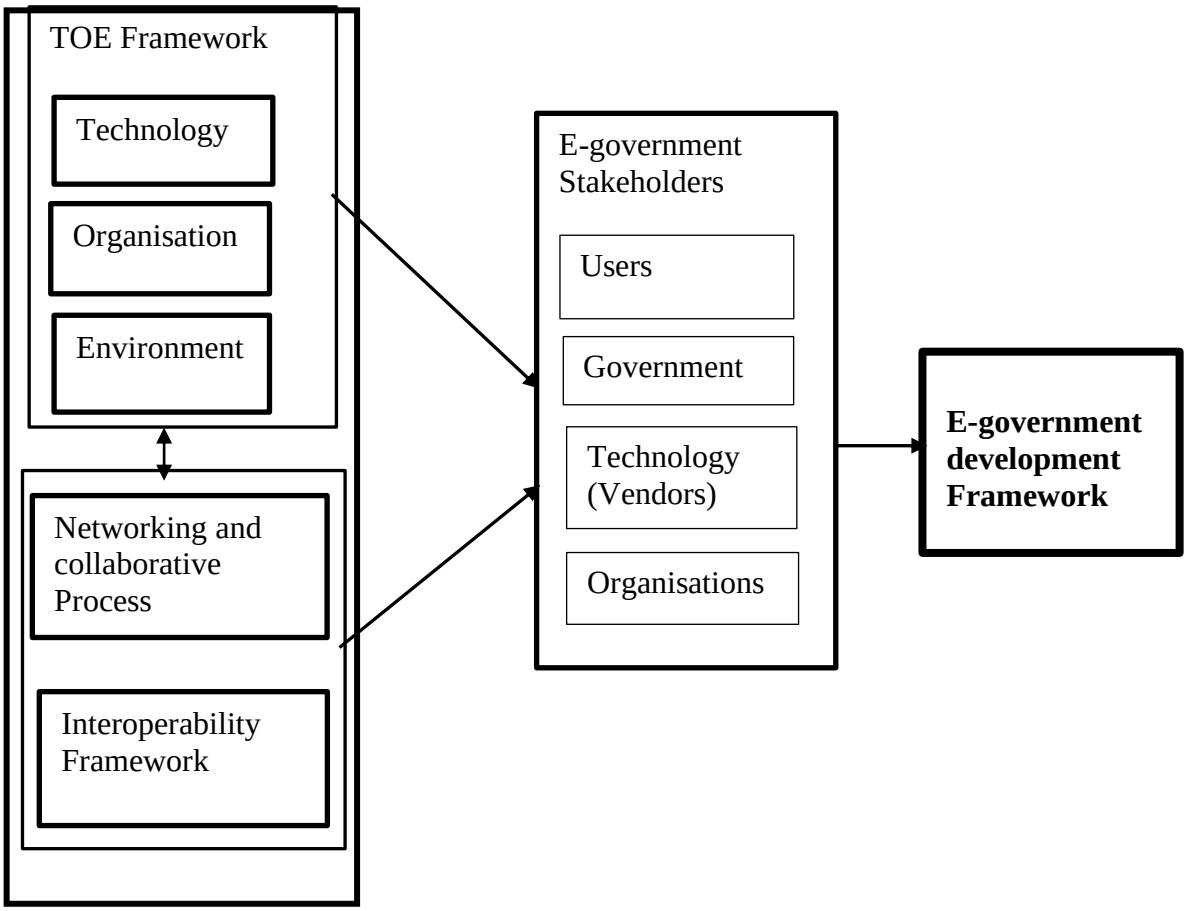
The E-government research framework presented in this study was theorised based on similar E-government frameworks that have been developed, tested and effectively implemented in both developed and developing nations around the world. The outcome of this research work leads to the development of a new E-government framework for Nigeria which the researcher named the e-GovDev framework. The framework resulting from this research enquiry is presented in chapter six of this research work.

The new E-government framework presented in this study is an extension and refinement of previous E-government frameworks that were previously developed and recommended to the Nigerian government for implementation by earlier E-government researchers. Then new E-government framework addressed gaps in previous E-government frameworks found in the literature. The new E-government framework will allow co-creation of a value-driven system of governance which promotes both inclusion and participation in governance by E-government Stakeholders. The new E-government framework represents an improvement over the previous E-government frameworks available in extant literature.

3.2 THE RESEARCH CONCEPTUAL FRAMEWORK

Independent variables **Moderator variable** **Dependent variable**

Figure 17: The Research Conceptual Framework



Source: The research author.

The research conceptual framework diagram is informed by the literature review and it is the framework for the investigation carried out in this study. Variables of the conceptual diagram and their inter-relationships are discussed below.

3.3 THE CONCEPTUAL FRAMEWORK VARIABLES

3.3.1 TOE Theoretical Framework

Technology, organisation, and environment (TOE) theory were developed by Tornatzky and Fleischer (1990), and it specifies three main factors that influence the adoption and organisational usage of technological innovation. Tornatzky and Fleischer explained that

the technological context includes both internal and external technologies that may be useful in improving organisational productivity. They define the organizational context in terms of the firm size and scope, complexity of the managerial structure, quality, characteristics and availability of firm's technology and financial resources, as well as environmental or institutional context; which according to Tornatzky and Fleischer refers to the firm's industry and dealings with business partners, competitors and governments (Tornatzky & Fleischer, 1990). Although the TOE theory was developed and applied to commercial activities, especially e-commerce, it is a useful framework that can be adapted and use in E-government applications.

For the purpose of this research study, the TOE theory was used to investigate how public-sector organisations (government MDAs) in Lagos State of Nigeria has been able to innovate and develop its public-service (e-Services) delivery using ICTs and the Internet. Using the TOE theory, the researcher was able to investigate the factors that facilitated E-government initiatives and those that served as barriers towards the development, adoption and use of innovative technologies for public-service delivery in Lagos State and how the findings from this work could by extension inform the development of e-government in Nigeria. The TOE theory is important to this study due to its consideration of technological innovation in the public-sector services and how its various linkages could inform transformational changes within organisational settings.

3.3.2 Technological context

Technology is a core element within the Toe theory framework. It provides the central argument that makes innovation possible within an organisation. The technological context investigated in this research work relates to the existing technologies (internal and external) in use by the Lagos State government Agencies and organisations at the time of conducting this study. ICTs and related technologies are essential for the development and implementation of E-government projects and initiatives. Studies have shown that technological capacity is a significant predictor of successful adoption of E-government initiatives and useful for the improvement of government efficiency and effectiveness (Gupta et al., 2008; Arduini et al., 2010, 2013; Luna-Reyes, Mellouli & Bertot, 2013; Welch & Feeney, 2014). Researchers of E-government also confirmed that the existence of well-developed ICT infrastructures alongside an overall well-developed

technological environment at national and sub-national levels are contributory factors to technological innovation adoption (Gupta *et al*., 2008; Arduini *et al*., 2010; Welch & Feeney, 2014). The perceptions of efficiency and effectiveness of technology, trust in government's use of technology, civic duty, and personal characteristics, among other things affects the ways organisations and citizens view and use technologies related to governance activities (Bélanger & Carter, 2008; Chen, 2010; Baldwin & Gauld, 2012). Feeney and Welch argued that "the technological capability of organisations should not be measured in the number of computers an organisation uses, the percentage of computers connected to the internet, or the number of applications on websites as these often give misleading information about the organisations IT capabilities" (2014, p.507). Research works in E-government and use of Information Technology suggested that technological capacity is a crucial determinant of the perceptions of managers on electronic service delivery effectiveness or its ability to engage the public. Recent work has shown that excessive amounts of 'capacity' also have adverse outcomes such that when more than the necessary technological applications are created and used in public-sector organisations, the work environment may become highly sophisticated and difficult to manage (Feeney & Welch, 2014). Rather than measuring or counting the number of computer gadgets within an organisation, it is necessary to measure technological capabilities in terms of functionality-and-fit between what kind of technology the organisation possess and whether it has the necessary skills to use those technologies in an efficient and efficient way (Welch & Feeney, 2014).

The interplay between social and technological context is explained in literature and theorised as Socio-technical system theory. Citing King and Scacchi (1982) Feeney and Welch asserted that Socio-technical theory examined "the interaction between people and technology as part of a larger social and technical mosaic in which the development and use of the focal technology are embedded" (2014, p.507). Based on this theoretical assumption, it is expected that the fit between the organisation and its technological component is a crucial determinant of E-government outcomes. In addition to how organisations make use of their existing internal technological capabilities, increasing numbers of government Agencies at different levels are exploring new and emergent technologies and how they could use these technologies to improve their internal operations, strengthen their relationships with citizens and other social actors. Some government organisations are gradually migrating from a hierarchical and rigid bureaucratic system of governance to a more flexible Networked structure which allows

for the participation of multiple government Agencies, organisations, and private organisations. Although there may be definitional differences, the post-bureaucratic arrangements has become the basis for a newer form of governance paradigm referred to in literature as the whole-of-government approach to governance (Gil-Garcia, 2012). The reality today is that local problems are increasingly becoming global, national boundaries are being redefined, and governments across the globe are collaborating and sharing information to combat complex public problems that transverse international boundaries. The emerging social reality necessitates broader collaboration between public and private-sector organisations and governments at international levels. Inter-agency collaboration facilitated using ICTs is generally referred to in literature as government inter-organisational information integration (GIII). Government inter-organisational information integration is a socio-technical phenomenon comprised of 1) trusted social Networks, 2) shared information, 3) integrated data, and 4) interoperable technical infrastructure. GIII uses information technologies to enable collaboration across organisational boundaries and the sharing of critical information to solve complex public problems (Gil-Garcia, 2012).

Technology and its adoption are central to development of E-government programmes. This study integrates technology, its adoption and use within the conceptual framework to help interrogate how public-sector organisations employees in Nigeria view contemporary technologies and whether technology can serve as drivers for innovative and transformative public-service in Nigeria, while at the same time examining factors that promotes, and those that impedes E-government development within the Nigerian public-sector organisations. It examines what various E-government Stakeholders in the Nigerian public-sector organisation are doing to make improvements in E-government as an to improve e-service delivery across all tiers of government both in Lagos State and the wider Nigerian context. The Toe theory integrates ‘organisation’ and the ‘environment’ with ‘technology’ to form a composite theory to study how firms can pursue public-sector innovation driven by modern ICTs.

3.3.3 Organisational context

The organisational context referred to in this research work comprises of institution's innovativeness, senior management support, organisational culture, the quality of human resource, and size of the organisation. Organizational culture is associated with the

organisation's sense of identity, its core values, employee's ways of working and a set of shared assumptions (Scott, 2008). While it is generally accepted in academic circles that adopting technology could result in important outcomes for governments and citizens, how organisational cultures shape the effectiveness of E-government initiatives resulting in their intended outcomes remains somewhat unclear (Welch & Feeney, 2014). Organizational culture is an essential determinant of the level of innovation adoption by any organisation. Welch and Feeney (2014) explained that when an organisation adopts new rules and policies related to E-government and information technology, their organisational culture can affect whether those rules and reforms are effectively adopted. Welch and Feeney (2014) noted that organisations are often subjected to their own regulations, and culturally cognitive elements. They believe that "while external government rules and mandates may require the adoption of E-government initiatives, effective organisational change requires normative shifts in thinking about such initiatives" (2014, p.508). Quoting DiMaggio and Powell (1983) Welch and Feeney further explained that "normative pressure can be more influential in organisational change than the rules and policies dictating such change" (2014, p.508). They concluded that organisational culture would be shaped not only by the organisation's mission and member's values, but also the external influences that exert pressure on the organisation (Welch & Feeney, 2014). In a collaborative environment, such outcome is often negotiated by members who are part of the Network process in a collaborative governance arrangement (Ansell & Gash, 2008; Guha & Chakrabarti, 2014).

Many social and information scientist have examined the effects of ICT and the Internet on organisational culture and on governments; but the results of such research efforts have often been mixed, contradictory and inconclusive (Fountain, 2006).

Researchers have observed Information System (IS) in one organisation which may have yielded good results could have different results when applied to another organisation. In order words, an IS system might have produced beneficial effects in one organisation, and on the other hand may result in negative effects in another organisation in a different environment.

Fountain (2006) observed that significant amount of the research in the field of public administration and Information Systems have focused more on effects and outcomes, neglecting the vital aspects of the processes of transformation by which such systems are enacted, or come to be embedded in organisation. Technology enactment framework

(TEF) emphasizes the influences of organisational structures, including "soft structures" such as behavioural patterns and norms on the design, development, implementation, and use of technology in public organisations. Fountain (2006) opined that "many organisations enact technologies to reinforce the political status quo". In many instances, technology enactment often, but not always refers to the tendency of actors to implement new ICTs in ways that reproduces, strengthen, and institutionalize socio-structural mechanisms even when such enactments may lead to seemingly irrational use of technology (Fountain, 2006) within the organisation.

In designing such technology, the underlying assumptions of designers play a major role in the type of systems developed and in the way such systems are enacted in government.

Fountain (2006) argued that if Information Technology is better theorized and incorporated into the central social science theories that guide the thoughts on how government function, researcher will have better and more powerful tools for explanations and predictions on the outcomes of the use of ICTs in government establishments.

By including 'organisations' as an integral part of the research conceptual framework the researcher was able to conduct surveys to explore how various organisational culture that existed within government Ministries in Lagos State impact how the employees of the various Ministries perceived and interacted with technologies that are available for use at their places of work. Attitudes of the employees towards adoption and use of technology is a significant predictor of whether the employees are prepared to embrace E-government and to what extent they are willing to use technology for public service delivery.

3.3.4 Environmental context

The 'environmental' context in this research work refers an organisation's surroundings. It comprises of multiple Stakeholders such as organisation members, customers (public), vendors, competitors, and the government (Tornatzky & Fleischer, 1990). Organisation Stakeholders can influence how an organisation will interpret its need for innovation, its ability to acquire the resources to implement innovation, and its capability to deploy such innovations (Angeles, 2014a). Stakeholders could either choose to support or block technological innovations depending on what sort of interest or objectives they consider important. However, collaborative participation in cross-agency arrangements often

favours dialogue and consensus-building over coercion when Stakeholders come together to work towards common objectives or goals (Stanforth 2007; Ansell & Gash, 2008; Guha & Chakrabarti, 2014).

Transformational E-government calls for critical changes in the way the Nigerian government conducts its business of governance which today is mainly bureaucratic in style and nature to one which is citizen-centred and proactive in nature. The change from bureaucratic forms of government to governance system built around the needs and aspirations of the citizens using ICTs requires new ways of thinking which should be reflected in new policies and strategies for governance that are driven from the top echelon of government. Apart from government rethinking its ways, the people too might need to change their behaviour and social norms (Al-Sebie & Irani, 2005) for a new way of governance to work for all. Cultural norms and believes can be adjusted from one steeped in cultural believes and idiosyncrasies to one which supports and aligns with the dictates of good governance; that of promoting and rewarding accountability, transparency, and efficiency in service delivery. The present realities of the public-sector organisations in Nigeria paints a picture of a governance structure saddled with bureaucratic red tapes, corruption and inefficiencies (Adeyemo, 2011; Dhamodharam & Saminathan, 2011b; Choudrie et al., 2012; Onwudebelu et al., 2012; Diga et al., 2013b; Alade et al., 2014; Choudrie *et al.*, 2017; Olumoye & Govender, 2018). Changing from a bureaucratic form of government to a governance structure anchored on ICTs is a very complex endeavour and one which is very difficult to achieve in the reality due to multiple barriers and challenges which must be overcome to enable successful transformation from the traditional form of government to one that leverages ICTs capabilities for good governance. Governments willing to embrace E-government must understand the challenges involved in transforming public-sector organisations and be willing to find ways to surmount the associated challenges. In pursuing a change agenda, the Lagos State government and by extension the Nigerian government must be guided by workable E-government frameworks based on the contextual factors of its surroundings and work at utilising local content and available resources and manpower to develop E-government projects that are jointly developed by E-government Stakeholders and thus reduce or eliminate E-government project failures.

3.3.5 Internal factors

Internal factors are factors that are peculiar to individual organisations and affects the performance of the organisations. Public institutions internal factors that can affect E-government development are the organisation's leadership quality, attitude of the workers regarding change or adopting new ways of doing things, availability of funds, and Network collaboration (Ashaye, 2014). Internal organisation factors have a significant bearing on whether organisation will be successful in adopting E-government. Various governmental institutions must be encouraged by government at the centre to look for ways to effectively manage and align public-sector organisations to control their internal factors to achieve effective use of resources and to continue to find ways to adopt E-government services.

3.4 E-GOVERNMENT AND NETWORKS

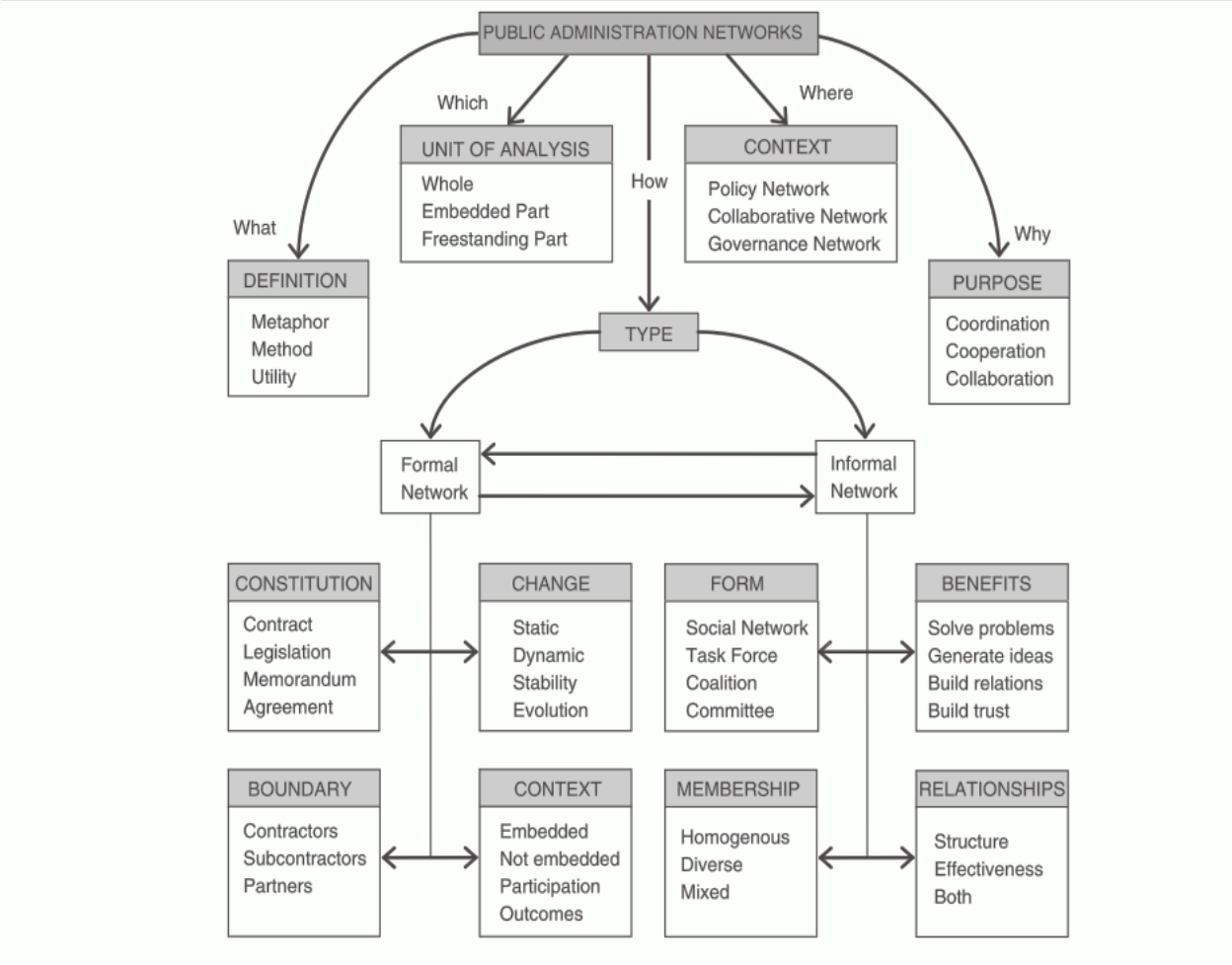
Government is not a monolithic entity but an aggregation of numerous Departments that varies in terms of their roles and responsibilities. The growing emphasis on decentralisation of government's activities, functions and participatory decision-making process has not only added new layers to government but also given greater voice to the citizens (Guha & Chakrabarti, 2014). According to Klijn (2005), the modern government is not just an ensemble of some Departments but a 'Network' characterised by considerable diversity. The introduction of Information Technology introduces a new element in the form of 'Technology' which have profound impacts on the structure as well as the relationship between different actors. The process of introducing ICT in governance must be considered with a view to creating Government Information Networks GINs) as against using it for internal efficiency – a process of automating internal workflows – which has already been addressed when Information Systems and Information Technology were introduced into offices as a mechanism for improving internal working conditions. To have a better understanding of how the Networked nature of government can improve or contribute to the success of an E-government paradigm a thorough understanding of the implication of what Networks are, and how they are deployed in government for service delivery should be an essential consideration.

The above definition of 'Network' has several important implications. First, it is important to recognise that organisations differ in terms of their cultures, structures, functions, goals, and the presence of multiple organisations within a Network formation

implies considerable diversity of opinions on how Networks will be formed. Second, the absence of a hierarchical relationship among the participating organisations makes it difficult to achieve unanimity on goals and objectives. Deciding on any course of action might require the use of coercive means to get some of the Network members to fall in line with other members. Third, due to the independent nature of the organisations present within the Network, it is not possible to give primacy to any single organisation or group of organisations comprising the Network (Agranoff & McGuire, 1999). Therefore, effective functioning of the Network requires voluntary co-operation of all Stakeholders or actors and a willingness to forego some individual goals which are not in tandem with the common objectives of all participating members within the Network. The formation of a Network goal, which may be distinct from the individual goals of the participating organisations is vital for effective collaboration. Nonetheless, goal congruence is possible only if all the actors feel that the value that they get out of the joint action will be more than the value that they can get otherwise (Kickert & Koppenjan, 1997). O'Toole (1997) asserted that complex Networks though relatively common nowadays, they are likely to continue to increase both in number and size. While acknowledging that Network theory provides many different definitions, often implicit and ambiguous of the word "Network", Bardach suggested his own definition of Network as "a set of self-organizing working relationships among actors such that any relationship has the potential both to elicit action and to communicate information in an efficient manner" (2002, p.4). Bardach's definition aims to convey the idea that the potency of a Network lies in the fusion of two capacities: 1) the capacity to organize working relationships and, 2) the capacity to transmit information efficiently. Bardach further identified four types of Networks that he opined are important if Networks were to be conceptually useful. Those Networks include: "provider Network" which could be a single source Agency or multiple Agencies in a "Network of providers" linked by the expectation of giving or receiving referrals and providing some sort of service to a single client. The "Contributors' Network". The Contributor Network links individuals and Agencies that are in the position to provide financial and political contribution of various types such as permissions to operate in new domains, budgets, and facilitating collaboration through certain accountability dispensations. The "Reputation Network" borders on rationally based trust and facilitates workings of both the provider and contributor's Networks. The fourth Network identified is called "Constitution-building Network" and it combines planning, external political advocacy, and internal negotiating

functions (Bardach, 2002). In synthesizing the narrative on Networks and its adaptive use in governance, Janowski *et al*., (2011), detailed how governments could collaborate with both State and non-state actors, working with them to make the best use of limited financial resources, skills and capabilities as it tries to proffer solutions to many of the problems confronting their various communities. They explained that the new paradigm of governance (collaborative Network) relies more on ICTs to build and sustain the relationships between Networks of E-government Stakeholders. Citing Isett *et al*., (2011) Janowski *et al*., explained that the "Network concept" has attracted more attention in the Public Administration literature which has extended to other research domains dedicated to policy Networks, collaborative Networks and, governance Networks (2011, p.51). A collaborative Network can be a composite arrangement of various E-government factors using partnership arrangements, like-minded alliances and, coalitions of Stakeholders alongside other forms of multi-organisational setups to bring together government Agencies and not-for-profit-making organisations in pursuit of a common goal to improve public-sector services (Janowski *et al*., 2012). In addition to providing a mechanism for public-sector service delivery, Collaborative Networks can serve as a vehicle for government to implement certain public policies where it would have been very difficult for either the private or other organised public-sectors to handle effectively on their own.

Figure 18: Conceptual framework for public administration Networks.



Source: Adapted from 'Government Information Networks - Mapping Electronic Governance cases through Public Administration concepts' Tomasz Janowski *et al.*, (2012).

The Nigerian government can continue to find ways to understanding the various processes by which an effective Network is formed and managed to improve the success of E-government projects in Nigeria. Government can promote and use modern ICTs and the Internet to form Government Information Networks (GINs). The formation of GINs can be explored by considering the processes involved in Network formation by exploring the processes involved in forming Networks that a suitable for delivering public services across governmental Agencies in a co-ordinated manner and across multiple channel of service delivery.

3.5 THE NETWORK PROCESS

Shared vison

Recent E-government surveys pointed to the vertical and horizontal fragmentation typical of public-sector administrations as a significant setback for implementing E-government systems (U.N., 2008, 2012, 2014). Problems often arise when public services cut across multiple Departmental lines without pre-existing protocol or interoperability framework that guides how government Departments share and use resources. The reality in Nigeria is that many of the government's Departments exists in silos without rules and regulations to guide how resources and databases could be shared information across organisation boundaries. Siloed existence of organisations hinders easy communication among workforce and individuals occupying a different silo in other governmental Departments. To overcome the challenges of siloed governmental structures, deliberate processes of re-engineering existing models of information flows, and decision-making processes within government Agencies must be sought and pursued (U.N, 2016; OECD, 2017). The re-engineering process must be based on a culture of trust-building, co-operation and collaboration across organisational boundaries must be encouraged and actively pursued by all Stakeholders who are interested in forming a Network of connected government Departments (U.N, 2008, 2012, 2016) by putting in place appropriate legislations and policies to guide how government Departments are connected and the protocols that all Departments must adhere to for information and resource sharing. However, for such policies and legislation to succeed, they must be developed around a shared vision by all Stakeholders or actors within a proper and mutually defined Network arrangement. All actors within a Network must come together for intense interaction. The intense interaction will result in the production of a set of goals and objectives agreed to by all Stakeholders. Kickert *et al.,* asserted that interaction between all potential actors within a Network "results in the articulation of the goals and objectives of all partners and gradual arrival at a consensus about the goals of the Network and roles of individual actors" (1997, p.172). Shared vision needs to be accompanied by deliberate organisational frameworks that are designed to function across organisational boundary lines with the view of promoting inter-agency collaboration and resource sharing. An essential step to achieving such collaborative participation within a Networked arrangement is that of instilling collaborative leadership. The collaborative leadership must ensure that every participant

within the Network share data and information willingly and are prepared to make such information accessible to the public (U.N, 2016).

Network partner selection

The first step in the formation of a Network is "the identification of the actors or participants within the Network that will play critical roles" (Agranoff & McGuire 1999, p.106) and confirm their willingness to participate in the Network arrangement. Kickert & Koppenjan (1997) believe that it is important to select the right set of actors at the beginning of a Network arrangement because the exclusion of a critical actor may close the door for future inclusion. The two most important factors that must be considered in selection of Network partners are: a) Resource dependence criterion and b) harmony of interest criterion. The principles of resource dependency imply that the selection of actors is done based on the resources at the disposal of the different actors willing to be part of the Network, implying that actors with resources critical to the achievement of the Network goals and objectives are considered for selection. According to Klijn (2005) resource availability does not guarantee that an actor will automatically commit his resources to the Network. To commit resources to the Network, the actor must feel that participating in the Network will satisfy some of his own core interests and goals.

Network Structure

In selecting a structure for the Network, it is important to understand the intricacies involved in developing and managing a successful Network. Important elements to consider are issues such as: creating Network goals and objectives, selection of actors and facilitating interaction between them, conflict of interest management between Network actors, creating trust-building institutions, and institutionalising Network goals and objectives. All these issues require a very careful selection of strategies and techniques that will reduce potential causes of friction and to continually promote factors that aids the collaboration between Network actors. Due to the interconnectivity nature of Networks – particularly that of Government Information Networks (GINs) – issues around how actors are added to the Network must be addressed. New Actors that form part of the Network could be Actors not directly concerned with governance; but may exist in the form of software developers, hardware suppliers, service delivery Agencies, and maintenance personnel (Walsham, 1997). Some of the new actors may be very powerful to the extent of being able to alter or influence the nature of the existing

Network. The introduction of ICTs in public service delivery as seen in E-government systems may result in profound impact on the structure and culture of organisations within information Networks. The effects of using ICTs in public-sector organisations could be in various forms such as workforce redundancies caused by automation of previous task that were otherwise manually handled. Since changes in the Network structure is inevitable in E-government projects, the Network managers must exercise a lot of caution in introducing change procedures and managing the Network in a way that the existing Network does not disintegrate. Kickert & Koppenjan (1997) suggested that changes should be introduced to an existing Network in a gradual manner so that the Network is allowed enough time to absorb and assimilate the new changes.

Network goals

All potential "Actors" must engage in series of intensive interactions with themselves to articulate the goals and objectives of all partners making up a Network to arrive at a shared vision that is consensual in nature and agreeable to all partners and clearly define the roles of each individual "Actors" (Kickert, *et al*., 1997). However, it must be noted that meaningful interactions are only possible if actors trust each other (Agranoff & McGuire, 1999). Considering the huge diversity among various actors, the issue of trust is a significant consideration. Trust may not be present from the onset when Network partners are being gathered. In such instances, it is vital to create institutions that would manage dispute through well-defined dispute resolution mechanisms to manage issues of trust as the Network solidifies. As part of the dispute resolution between warring members, penalties for failing to stick to contract agreements may be appropriate. Where penalties for failing to adhere to the Network rules are clearly set out and unambiguous, Network partner would be more careful about their behaviour within the Network arrangement.

Network incentives

The existence of a shared vision and common objectives does not mean that each "Actor" does not have his own reason for joining the Network. Therefore when designing incentives for the Network, the interests of each participating member is taken care of (Saito, 2008). The inherent differences among the actors imply that different approaches may be needed to control actors (Meuleman, 2008). A judicious mixture of methods like incentives, contracts, penalties, and persuasion needs to be used as the situation demands

(Meuleman, 2008). Moreover, a flexible approach should be guided by the interest of achieving the Network goals.

Institutionalisation of Network goals

An important outcome of an intensive interaction process between "Actors" in a Network is the emergence of a shared vision about the goals of the Network. However, for the shared vision to have a lasting impact, it must be collectively shared and agreed upon by individuals representing various organisations with a view towards institutionalising such goals within the parent organisations (Kickert & Koppenjan, 1997). Without proper institutionalisation of goals within the parent organisations, the goals that were previously agreed may become vulnerable to changes by individuals in the various organisations that were not involved in the initial interaction process. Institutionalisation of Network goal is a necessity for E-government projects where collaborative participation is of the essence. It must be noted that institutionalisation of the Network goals is not an easy process due to the existence of powerful institutions within bureaucratic public organisations that may have some influence on members of the Networked organisations. Scott, (2008) observed that the environment strongly influences rules and procedures at the time of their framing. The existing rules and procedures may not agree with the new goals of the Network. However, through repeated use over time, these rules, and procedures becomes internalised.

Table 10: Five Key Network Processes

Network process	Activities	Relevance to e-government
Politics of partner selection	• Identifying critical resources • Identifying actors possessing critical resources • Identifying goals and interests of critical actors	• Ensuring availability of resources critical for success of e-government project
Arriving at shared vision	• Identifying core concerns of actors • Resolving bargain process as a 'zero-plus' game • Designing institutional framework to take care of trust deficit	• Ensuring consensus about roles, goals and responsibilities of each actor
Institutionalisation	• Harmonising organisational rules and procedures with network processes	• Ensuring that electronic processes are not replaced/tampered in the long run
Structuring the network	• Identifying role and power of existing actors • Appreciating possibilities of interlinked processes • Structural changes to be introduced with care and caution • Avoiding mismatch between information network and actor network	• Ensuring smooth functioning of inter-linked processes and facilitating coordination by seamless flow of information
Incentive design	• Creating incentive for ensuring participation of critical actors • Judicious mix of incentives, contracts, penalties and persuasion	• Ensuring long term commitment of all actors necessary for smooth functioning of the electronic process

Source: Adapted from 'Making e-government work: Adopting the Network approach' Guha and Chakrabarti, (2014).

3.6 GOVERNMENT INFORMATION NETWORKS AND CROSS-AGENCY COLLABORATION

"How well-equipped are today's public administrators to face the challenges they confront from the involvement of businesses, not-for-profits, other units of government, and even clients in complex patterns of program operations?....., Practitioners need to begin to incorporate the Network concept into their administrative efforts. The challenge for scholars is to conduct research that illuminates this neglected aspect of contemporary administration". - Laurence J. O'Toole, Jr.

The strategic adoption and use of Information and Communication Technologies (ICTs) in government activities have been identified as a powerful tools for administrative reforms (Luna-Reyes *et al.*, 2007; U.N, ECA, 2010-2012). Literature shows that many nations around the world are advancing online public-service delivery models as well as developing and implementing new E-government projects using the Internet and ICT-based applications to increase efficiency in public-sector services (U.N 2012; Zhang *et al.*, 2014; Choi *et al*., 2016). ICTs allow government MDAs that hitherto existed in siloes to communicate across organisation boundaries seamlessly and effectively towards e-service delivery.

Cross-agency collaboration is not an entirely a new concept in government. The concept has been loosely referred to in public management literature as "collaborative public management" (Agranoff & McGuire, 2004; O'Leary et al., 2006; O'Leary & Vij, 2012), "Collaborative governance" (Ansell & Gash, 2008; Emerson *et al*., 2012), and "collaborative E-government" (Bertot *et al*., 2012, Chun *et al.,* 2012). Although Collaborative governance can be said to be closely related to collaborative public management, according to Kapucu *et al.,* (2012) the two concepts differ both in scope and substance. While Collaborative public management has a narrow scope both geographically and regarding inclusiveness (locally and at organisational levels), Collaborative governance has a global scope, focusing on solving societal problems by engaging the citizens through collaborative participation and improving institutional structures (Kapucu *et al*., 2012). In reviewing public administration literature, one often notes that the concepts of collaborative public management and collaborative governance are sometimes be used interchangeably. For instance, Agranoff and McGuire described collaborative management as "the process of facilitating and operating in multi-organizational arrangements to solve problems that cannot be solved, or solved easily by single organizations" (2004, p.4). In support of this view, Inter-agency collaboration as observed by Gil-Garcia (2012) discussed ways government Agencies could work and share databases and information across organisational boundaries.

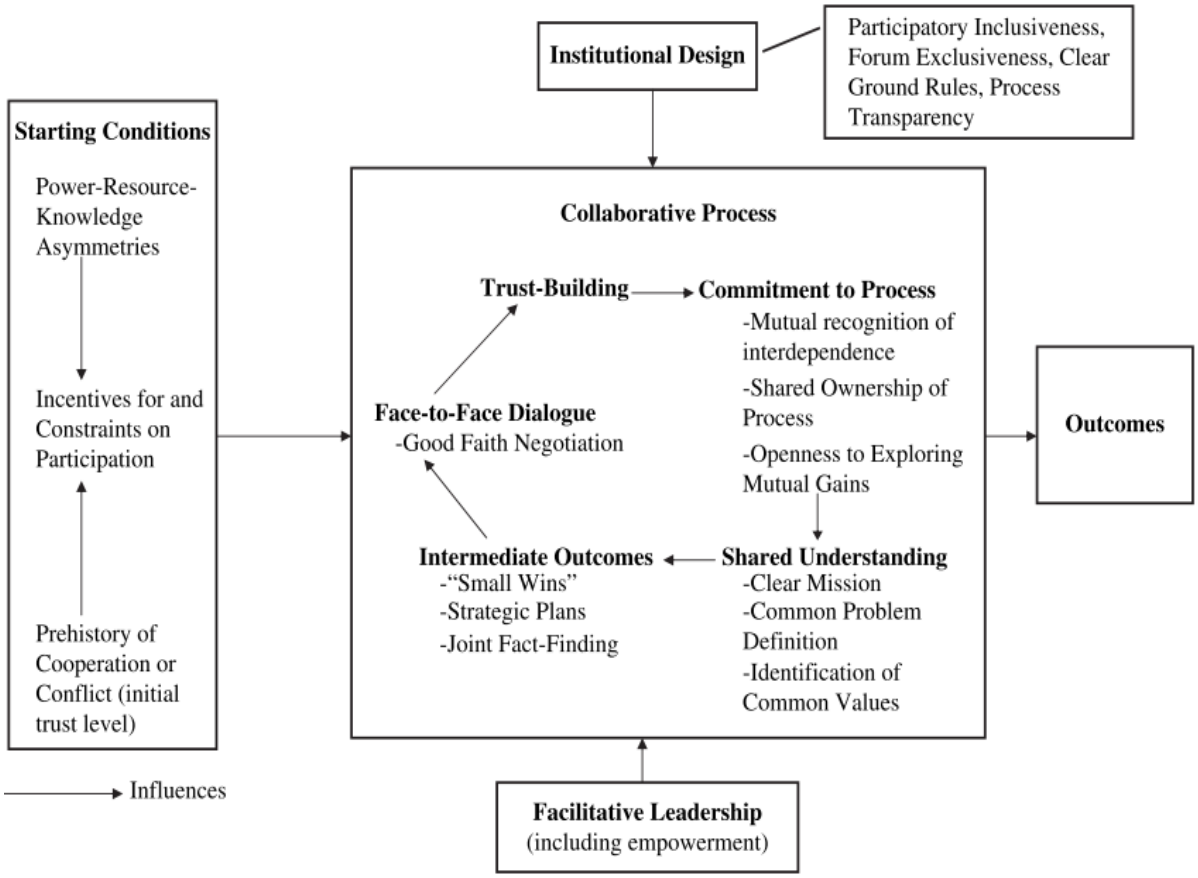
Cross-agency information sharing arises from the need of a whole-of-government approach towards addressing the 'hydra-headed' and complex societal problems (Christensen & Lægreid, 2006; Luna-Reyes *et al*., 2007). It is no longer news that the world is shrinking into a global village where local problems of degradation, economic crises, terrorism, public health, and national security easily spread across national boundaries at often unimaginable speed and time. To tackle these social problems in the current digital era, collective and synchronised efforts that are effective must be pursued through collaborative efforts between government Agencies working across local and international organisational boundaries. Data and information sharing between national and international Agencies using state-of-the-art ICTs that are based on open and shared information should be the norm rather than the exception (Harrison & Sayogo, 2014; Gil-Garcia & Sayogo, 2016). Inter-organisation information sharing in the public-sector depends largely on Government Interoperability Framework (GIF) documents that clearly specifies some common set of elements such as concepts, working policies and principles, to guidelines, standards, vocabularies, recommendations and practises that must be

adhered to by all participating Agencies (Guijarro, 2007; Lisboa & Soares, 2014). While collaborative governance approach is commendable, it must be noted that there exist huge technical, political, economic, social and organisation obstacles that must be surmounted if governments objectives of linking governmental Agencies together with the view of sharing information are to be met. Fountain (2006) had earlier extensively discussed the need to consider other factors such as organisation culture and the environment in the process of enacting technology. She noted that: "many social researchers have examined the effects of ICT and the Internet on organisations and on government yet the results of such research have often been mixed, contradictory and inconclusive" (2006, p.4). To address the issue of collaboration across Agency boundary lines, all Stakeholders must come together to discuss ways and techniques that will encourage voluntary participation. Citing Vangen and Huxman (2003), Luna-Reyes *et al.*, asserted that "a common model explaining collaborative relationships involves a virtuous cycle of trust, willingness to collaborate, and work done (2007, p.811). Chun et al., described collaborative E-government as "ICT-facilitated collaboration environments for government; a situation where collaboration can be interaction-based and occurring between governments Agencies (G2G), between governments and businesses (G2B), or between governments and citizens (G2C)", (2012, p.6). Collaborative governance is gaining prominence as a response to the failures of downstream implementation and to the high cost and politicization of regulation within government (Ansell & Gash, 2008).

The growth of knowledge and institutional capacity is also fuelling the gravitation towards collaboration in governmental processes. As knowledge becomes increasingly specialized and distributed and as institutional infrastructures become more complex and interdependent, the demand for collaboration inevitably increases. While it is true that Information communication technologies are increasingly used within various governmental organisations and works across organisational boundary lines to provide inter-organisational platforms for collaborative participation among the different Agencies, more needs to be done to understand how consensus is built and reached among all E-government Stakeholders. To elaborate a contingency model for collaborative governance, Ansell and Gash (2008) identified various factors that influence whether collaborative governance model of governance can produce successful collaboration amongst its various Stakeholders. They discussed in detail variables such as the prior history of conflict or cooperation, the incentives for Stakeholders to participate, power and resources imbalances, leadership, and institutional design (Ansell & Gash, 2008). In

support of Luna-Reyes *et al*., (2007) Ansell and Gash also noted that collaboration often depends on achieving a careful balance while moving in circular manner between communication, trust, commitment, understanding, and outcomes. They concluded that collaborative process is difficult to represent with a simple diagram because of the nonlinear nature of the interaction between Stakeholders.

Figure 19: A model of Collaborative Governance.



Source: Adapted from 'Collaborative Governance in Theory and Practice' Ansell and Gash, (2008).

3.7 COLLABORATIVE GOVERNANCE

Starting Conditions

Literature is clear that the starting conditions present at the beginning of the collaborative process can either mar or promote cooperation between various Stakeholders. Some of the starting conditions for collaborative governance includes the Power-Resource-

Knowledge Asymmetries, incentive for, and constraints on participation, and the prehistory of cooperation or conflicts. Ansell and Gash (2008) observed that power imbalance among Stakeholders is a common factor that hinders collaborative governance. Where some Stakeholders within the Network structure do not possess enough or needed capacity or resources to participate on an equal footing with other Stakeholders, the collaborative governance process will be subjected or prone to manipulation by stronger and powerful actors within the Network. The problem of power imbalance is particularly problematic where vital Stakeholders do not have the organisational infrastructure to be represented adequately in the Network equation. As part of the starting conditions for collaborative governance, it is important to consider the effects of prehistory of cooperation or conflicts that might have existed between organisations coming together to collaborate in Network. Ansell and Gash (2008) observed that where there exists a prehistory of rancour among Agencies, it lowers the levels of trust, which in turn produces lower levels of commitment and dishonest communications that are often traceable to the prehistory of conflicts between various actors that are part of a collaborative governance arrangement.

Institutional design.

According to Ansell and Gash (2008), the institutional design includes issues related to participatory inclusiveness, forum exclusiveness, the underlying protocols and ground rules for collaborative participation, and process transparency. They recognise access to the governance process as fundamental and central to the design issues of the collaborative process model.

Facilitative leadership.

Leaders often expect Stakeholders to engage in good faith negotiation and to explore possibilities for compromise and mutual gains. However, Stakeholders often enter the collaborative process with reservations and concerns of their own. Strong and effective leadership is required if weaker Stakeholders are to be represented and empowered. Ozawa (1993) referred to ‘transformative techniques’ as a mediation procedure that helps to bring about a balance of power among Stakeholders in a Network arrangement.

3.8 COLLABORATIVE PROCESS

Dialogue

Face-to-face dialogue is the preferred and often recommended medium of negotiation between stakeholder within the collaborative governance process. Face-to-face dialogue is recognised in collaborative governance process as a consensus-oriented process (Ansell and Gash, 2008). It is at the very core of the entire process of breaking barriers to communication that prevent exploration of mutual gains. Face-to-face dialogue is at the heart of the process of mutual respect, shared understanding, commitment to the process and, trust building.

Trust-building

Trust building is essential if collaborative governance is to succeed. Ansell and Gash explained that collaborative process is not "merely about negotiation but also about building trust among Stakeholders"(2008, p.16). when Stakeholders trust each other, it is easier to enter into, and make commitments towards the overall goals and objectives of the Network.

Commitment to process

Commitment to the processes of the Network's vision and objectives is necessary to keep the initial motivation to participate in collaborative governance alive. Stakeholders may wish to continue their participation actively to make sure their interest is not neglected.

Shared understanding

A shared understanding of what every member of a Networked arrangement wants is prominent among the factors necessary for collaborative governance process. When Agencies are clear on what they want to achieve, and how to go about the process, collaborating with other each other is often easier to establish. Although the previous history of cooperation and mutual respect is also a considerable factor in determining whether or not Agencies would work together successfully (Ansell & Gash, 2008). Ownership connotes shared responsibility for the process of collective governance. The responsibility of shared ownership requires Stakeholders to see their relationship with

other Stakeholders as one in which they share responsibility with their opponents and operate with honesty and openness.

Outcomes

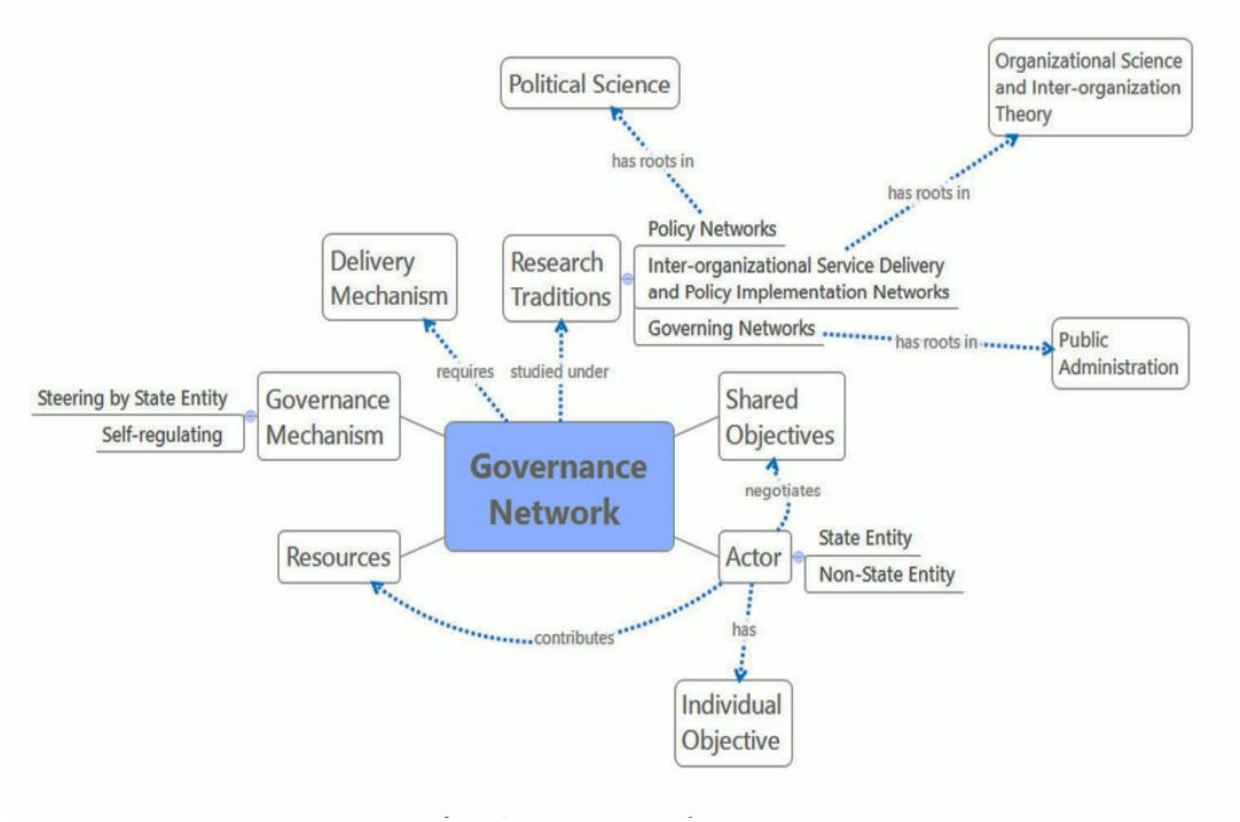
Where the existence of previous antagonism is high and a long-term commitment to trust building is necessary. In situation like this, the intermediate outcomes that produce "small wins" are particularly crucial (Ansell and Gash, 2008). Usually under these circumstances, if Stakeholders or policymakers do not anticipate these "small wins", then they probably should not embark on a collaborative path as this may lead to further provocations and disruptions within the Network.

Ansell and Gash (2008) concluded that the term collaborative governance promises a "sweet reward". They observed that the term “sweet reward” seems to hold the premise that if ‘we’ govern collaboratively, ‘we’ may avoid the high costs of adversarial policymaking, expand democratic participation, and even restore rationality to public management.

3.9 GOVERNANCE NETWORKS

Stein *et al.,* (2011) cited by Ojo and Mellouli, defined governance Networks as “social Networks of actors in addition to formal government systems of actors” (2016, p.1). Research has shown that informal state actors are assuming equally important roles and gaining recognition in the overall governance effort alongside their formal state counterpart in government (Ojo & Mellouli, 2016). Ojo and Mellouli citing Eggers and Goldsmith, (2004) assert that "three megatrends have accelerated a transition towards Networked governance: 1) growth of outsourcing. 2) movement towards joined-up government service delivery. 3) Digital revolution, enabling communicating and collaboration with partners across organisational boundaries" (2016, p.1).

Figure 20: Governance Network Concept.



Source: Adapted from ‘Deploying governance Networks for societal challenges’ Ojo and Melloluli (2016).

Collaboration between government Agencies and Stakeholders is generally geared towards responsive decision-making arising from joint tasks and feedback information. Collaboration encourages free participation in government processes and operations (Veljković *et al.*, 2014) relying on a common set of social media tools for collaborative working. Governments are creating governance Networks in many parts of the world as a response to the complex needs of societies that are increasingly getting "smarter". More than ever before, governments are dealing with non-state actors (businesses and citizens) across a wide range of issues and in delivering public services. These services cut across health, education, security and economic activities within the frameworks of sustainable development programs such as the Millennium Development Goals (MDG) (Ojo & Mellouli, 2016). Government Networks can serve as a means to tackling societal ills, cross-fertilising of ideas with the citizens, improving relations and trust-building between government and the general public (Janowski *et al.*, 2012).

3.10 E-GOVERNMENT INTER-OPERABILITY FRAMEWORK

As electronic government models grow and matures, it inevitably will involve more and more ICT-enabled Networks to function effectively and serve its intended purposes. The expansive Government Information Networks has the potential to be a key enabler of smart governance for the post-2015 development Agenda (Henning, 2016). Government Information Networks (GINs) is defined as "all ICT-enabled policy Networks, collaboration Networks and governance Networks" (Janowski *et al.*, 2011). They are a phenomenon in public governance stemming from the increasing utilisation of the transformative potential of ICTs for administrative reforms towards "connected governance" (United Nations, 2008). Connected governance is a shift from hierarchical mode of governance towards "heterarchical governance structure"- a Networked architecture that replace the vertical sectoral boundaries of traditional bureaucracy with collaborative inter-organisational Networks, including partnerships with private and non-profit organisations. (Henning, 2016).

Advances in modern technology has continued to influence newer ways of thinking about the increasing integration in service delivery based on commonality of infrastructures, data and business processes. The focus on strengthening the interlinkages between E-government and connected government is forming the underpinnings of E-government strategies in many developed countries (U.N, 2008). Interlinking government Department and Agencies towards delivering public services via a unified government portal are achievable where there is an interoperability framework that guides the modus operandi of all participating Networks. An E-government Interoperability Framework (IF) is a set of document or group of documents that clearly outlines or specify a set of common elements such as vocabularies, concepts, principles, policies, guidelines, recommendations, standards, and practices for Agencies that wish to work together, towards the joint delivery of public services (Lisboa & Soares, 2014).

The United Nations E-government survey report of 2008, observed that "the cornerstone of the E-government strategy is becoming service innovation achieved by moving to multichannel service delivery and better use of back-end processes and systems" (U.N, 2008, p.5). Innovative ways of thinking are creating a drive towards increased collaborative models of service delivery.

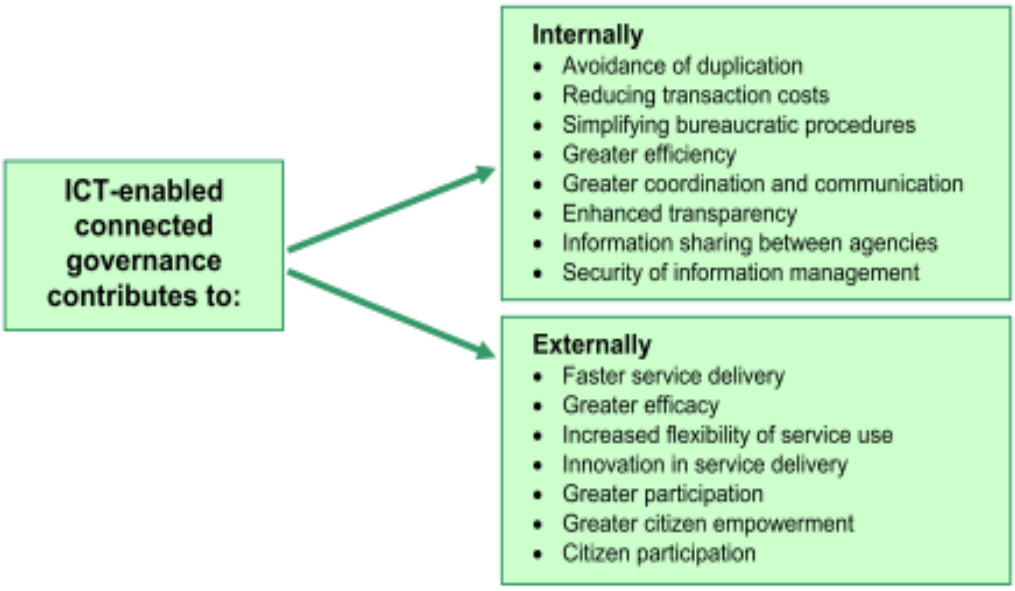
Although the E-government phenomenon is widely described in many works of literature as holding the potential to transform the way public Agencies operate, evidence still suggests that the image of public Agencies as operating as a "set of silos" is yet to disappear from public-sector organisations (Lisboa and Soares, 2014a). For governments to achieve a truly connected public-sector, “public Agencies need to operate in a jointly and articulated way, and not as islands of services among which citizens need to move, get easily lost, and waste time and money”(Lisboa & Soares, 2014, p.639). According to Lallana (2007) cited in Lisboa and Soares (2014), Government Agencies should move towards streamlining their operations to improve the quality of public service delivery and at the same time improve the internal efficiency of Agencies, reduce their costs of operation, and promote transparency and accountability of public-sector services.

Andersen & Henriksen (2006) cited in (Valdés *et al*., 2011) are of the opinion that E-government among other things should involve the integration of different services provided by public Agencies that had never worked together previously. Government Agencies wishing to collaborate and work together across Agency lines will need to overcome numerous challenges such as those involving “data and technological incompatibility, the lack of institutional incentives to collaborate, and the politics and power struggles around a pervasive silo structure in most governments, among many others”(Gil-Garcia, 2012, p.269). Klievink and Janssen's (2009) stage model cited in (Yang *et al*., 2014) conceptualised E-government collaboration from a single organisation level perspective to a nation-wide level. They explained that although some government Agencies have integrated their services within their organisations, citizens and businesses may still have to interact with several other external Agencies to obtain their services.

For E-government to succeed in Nigeria, there is the need to achieve Networked governance which often involves engaging the creative efforts of all E-government Stakeholders. There must be concerted efforts to influence the strategic actions of E-government actors targeted at improving cooperation between governmental Agencies while allowing for an enhanced, active and effective consultation and engagement with the citizen. Developing effective strategies for achieving connected governance is complex and multifaceted. The general focus, however, should be on the development of a single authoritative source for information and data as part of the overall information management policies of the government.

Technical interoperability framework outlining standards, policies and practices to support interoperability between ICT systems and applications is an essential component of a holistic strategy that must be actively pursued by all Stakeholders. The Lagos State government and by extension the Federal government can find ways to collaborate on public issues and develop collaborative mechanisms to share information and resources across layered tiers of government in a seamless way towards achieving synchronised service delivery across multiple channels to the benefit of the public.

Figure 21: ICT-enabled Connected Governance.



Source: Adapted from ‘ U.N E-government survey report’ (2008)

The situation described above calls for solutions consistent with the whole-of-government approach that involves more coordination and collaboration among government Agencies, and between other social actors. This inter-agency collaboration and the potential use of IT to make it more effective has been characterized as government inter-organizational information integration (GIII) - a socio-technical phenomenon comprised of trusted social Networks, shared information, integrated data, and interoperable technical infrastructure (Gil-Garcia et al., (2010). GIII uses information technologies to enable collaboration across organisational boundaries and the sharing of critical information to solve complex public problems (Gil-Garcia, 2012). Gil-Garcia *et al*., (2010) argued that instead of a dichotomy, the concept of government inter-organisational information integration should include components in a continuum from social to technical aspects. According to Gil-Garcia *et al.*, (2010) trusted social Networks

refer to Networks of actors that collaborate and trust each other; while ‘shared information’ is the sharing of tacit and explicit knowledge in the form of documents, conversations, and emails. Integrated data focus on integration at the level of data elements and related standards, and interoperable technical infrastructure deals with systems that can communicate with each other at the hardware and operating system level.

Connected governance that is functional is most likely to contribute to the transformation of the public-sector with a resultant effect of higher cost-savings, enhanced service efficiency and reduced administrative burden (U.N, 2008, 2012, 2014, 2016).

By encouraging collaborative participation among MDAs, the Lagos State government will benefit from a governance system that is truly connected in a form that leads to an efficient functioning of government operations, allowing for collaboration between and across Agencies in both vertical and horizontal manner and delivering valuable public services through ICT-enabled multichannel online delivery mechanisms that are timely and convenient to access by the public. Besides an effective functioning of government operations, connected governance can also increase the transparency of government operations that hitherto were generally perceived to be corrupt and inefficient. Connected and transparent governance paradigm can result in improvements in the overall quality and functioning of both internal and external workings of public Agencies and subsequently change managerial and organisational arrangements towards efficiency of service delivery. The overall benefits of a connected governance paradigm are improvements in the public-sector management systems that allows for enhanced service delivery and better functioning of government built around the needs of the citizens in an inclusive and participatory way.

3.11 MODERATOR VARIABLES

The moderator variables in the research framework are the contextual elements of E-government Stakeholders.

3.11.1 E-government users and Stakeholders

Freeman defined Stakeholders as "any group or individual who can affect or is affected by the achievement of the organisation's objectives" (Freeman, 1984, p.46). Also, in subsequent work, Freeman explained the term "stakeholder" in a slightly different way

with a bias in definition towards "stockholders" as opposed to "Stakeholders". Rather than defining the unit of analysis as "interest groups" or "constituencies", the term "stakeholder" deliberately denotes a contrast to "stockholders", or "shareholders (Freeman, 1999). This refined definition of "Stakeholders" allows broader scope for the application of the concept of stakeholder theory outside the traditional business management discipline. On the other hand, Mitchell et al., (1997) point out that as an entity, a Stakeholder can refer to individuals, groups, organisations, institutions, societies and even the natural environment. Although Stakeholder theory in itself is originally an explicit theory on private sector entities, scholars have been applying the concept to public-sector organisations (Scholl, 2001). The trend of applying Stakeholders' theory to public-sector service has been supported by other E-government researchers (Tennert & Schroeder, 1999; Freeman *et al.*, 2010). In 199. Tennert and Schroeder (1999) argued that Stakeholder analysis in the public-sector has not been well defined methodologically. They argued that it is often assumed that the Stakeholders are already known and have already self-selected themselves to the process in certain ways. In observing the scenario where Stakeholders self-elect themselves to represent the interest of the public, Flak and Rose (2005) stated that much of government-focused research assumes rather easily that the interests of government on a managerial level also represent the interests of other Stakeholder's views or interests. This mistaken view of Stakeholders is evident in the public e-services literature bordering on Stakeholder theories as it relates to public-sector organisations. This mistaken assumption of the identity of Stakeholders within public-sector organisations is one reason why the citizens are marginalised when important decisions regarding public services are designed and implemented (Tennert & Schroeder, 1999). Identifying public e-service Stakeholders in a structured and deliberate manner is not only vital but essential for getting the knowledge and information needed for public e-service development and implementation (Axelsson *et al.*, 2013). Overlooking Stakeholder analyses can result in omission of significant Stakeholders on whom the realisation of the e-service depends (Scholl, 2004). Freeman's (1984) definition of Stakeholders as discussed earlier highlights an important fact about the broad scope of the analysis for identifying Stakeholders beyond private-sector entities to give room for anybody who is either directly or indirectly affected by the activities and achievements of any organisation to be a Stakeholder (Tennert & Schroeder, 1999). Prior to the concept of Stakeholder defined by Freeman (1999), Mitchell et al., (1997) presented propositions for Stakeholder identification and salience. Salience here refers to "the degree to which

managers give priority to competing stakeholder claims" (Mitchell *et al*., 1997, p.869). The notion of stakeholder salience is a significant contribution and extension to stakeholder theory pointing out that not all Stakeholders are equal in relation to a given issue. With regards to Stakeholder salience, the researcher has considered the various Stakeholders' (State and non-State Actors of E-government) relative degree of salience within the framework of collaborative participation in governance and the need to arrive at a consensus by all Stakeholders in a connected governance structure which is a necessary step for the design and development of a whole-of-government approach to an E-government framework.

In analysing the various Stakeholders necessary for developing a robust E-government system, examining some of the stakeholder typologies found in the literature is a vital guide. Heeks (2006) formulated a typology of E-government Stakeholders and identified the various roles played by the Stakeholders in relation to their functions within the public-sector e-services. Heeks explained that the various roles of Stakeholders within an E-government system could be ascertained by asking the questions "who has the power and ability to make the project and system fail in some way?" He further posited that these roles can be divided into two partly overlapping stakeholder groups; those involved with the development of the E-government system, and those involved with the operation of the E-government systems. Continuing his argument, Heeks pointed out that due to the overlapping nature of the roles of the Stakeholders within the E-government system, the same individual or group can play several of these roles. He concluded that this analysis of Stakeholders should be an integral part of the initial phase of E-government projects. He suggested that when analysing Stakeholders, it is important to examine to what extent the roles are present within the E-government system, and if there is any overlapping between the roles, and the extent to which conflict or cooperation between the different Stakeholders can be managed (Heeks, 2006).

Table 11: Roles of E-government Stakeholders identified by different authors.

Source	Stakeholder categories
General categorizations	
Heeks (2006)	Non-profits, other agencies, citizens/customers, businesses, communities, government
Mintzberg (1996)	Customers, clients, subjects, and citizens (constituents for e-government services)
Orange, Burke, Elliman, and Kor (2006)	Politicians, staff, public, project managers, design developers, other government agencies
UN (2008)	Public administrators, programmers, end-users, politicians
Yildiz (2007)	Government, citizen, business, civil society
Special purpose categorizations	
Beynon-Davies (2005)	Customers, suppliers, partners, employees (general) Large and small businesses, individual tax payers, students/graduates, senior citizens (for Inland Revenue, UK)
Flak and Nordheim (2006)	Regional council, regional partners, national and international policy makers, systems vendors, county governor, county municipality, citizens of municipality, municipal politicians, municipal administration, municipal service production units (for a local government project in Norway)
Heeks (2003)	Senior managers of the Epidemiology Service, Ministry of Health, internal users (managers health specialists, statistical specialists, information systems personnel), external users (in various ministries, local authorities, research institutions and international organizations), citizens (computerisation in a national Epidemiology Service in Central Asia)
Irani et al. (2007)	Informed citizens (academic), elected representatives, local government staff, regional and central staff, others (VIEGO participants)
Millard (2008)	Policy makers, researchers, practitioners, constituents as citizens and businesses (stakeholders in impact measurement)
Tan et al. (2005)	Singapore government, IRAS (Inland Revenue Authority of Singapore), tax officials, taxpayers, employers (e-filing for tax initiative)

Source: Adapted from ‘E-government Stakeholders—Who are they and what do they want’? Jennifer Rowley, (2011).

Although Heeks (2006) acknowledged the existence of sub-categories such as ‘politician' and ‘influencers' to the ‘other' category, his typology does not fully address some of the issues relating to stakeholder's roles and duties within an E-government system, nor does it fully capture the deeper understanding of the Stakeholders implied by the public-sector context. To address Heeks (2006) typology shortcomings, (Lindgren, 2012) proposed an additional typology with constructs distinguishing between the various E-government entities and the division of the construct ‘government' into three separate subcategories of ‘Decision maker', ‘Management', and ‘Service provider'. The sub-categories can apply to E-government projects on either national or at the local level of government (Axelsson *et al.*, 2013). For example, the sub-category ‘Decision maker’ is meant to apply to both politicians on a national level as well as the highest ranked decision maker in an organisation. The ‘Management’ subcategory refers to higher level employees who are concerned with governing its Agency according to directions provided by the decision makers, whereas the ‘Service provider’ subcategory refers to lower level employees working at the Agency’s interface towards the citizens.

Table 12: E-government Entities.

Basic entity	Sub-categories	Description	Interest
Government	Decision maker	Decision and policy maker.	Develop and implement own policies.
	Management	Middle and higher level salaried career employees executing decision makers' policies.	Ensure policy implementation effectively and efficiently.
	Service provider	Lower level salaried career employees carrying out day to day government jobs directly or indirectly interacting with citizens/users.	Ensure meaningful and secure work situation. Provide good quality service.
Individual / Citizen	User	Uses services offered by the government.	Easy access to information and services.
	Engaged user	Users involved in efforts to affect specific government policies and decisions through civil action, often individually or in groups.	Impact policy development and public decision making processes.
Business	Consultant and vendor	Companies, mostly private, who provide systems (software, hardware, infrastructure) and/or consulting services in e-Government projects.	Apart from commercial interest, they attempt to influence government policies in such areas as procurement, standards and even strategy.

Source: Adapted from 'Public e-services for Agency efficiency and citizen benefit — Findings from a stakeholder centred analysis' (Axelsson, et al., 2013).

3.12 E-GOVERNMENT LIFE CYCLE

PRE-DEVELOPMENT PHASE

E-government pre-development conditions entail that countries wishing to embark on E-government projects are equally E-ready (Heeks, 2001b; Nations, 2004). According to Heeks (2001), E-readiness among other things involves the ability of the host government to make available E-government support infrastructures such as data and information processing systems, technical and telecommunication systems, human and institutional infrastructures, legal frameworks, and stable power supply. These are the basic set of core requirements to develop and implement E-government systems in any given environment. Without the basic infrastructure put in place by governments as a pre-condition, E-government simply cannot work.

DEVELOPMENT PHASE

Citizen engagement

The development phase of E-government projects requires that E-government developers engage the citizens through a consultative process that involves listening to them for inputs both in the design process and during the stage when contents for the online E-government system are prepared. By listening and taking feedback from the public, the citizens feel valued and will be motivated to adopt and use the service provided. Hence, increasing participation, adoption and use of the E-government system by the public becomes easier. In addition, citizen engagement promotes E-participation and fosters inclusiveness in the governance process.

Partnership building

partnership building entails government involving other E-government Stakeholders at all levels during the development phase of E-government projects. For instance, Hardware and Software vendors could bring a valuable contribution to the design and production of E-government artefacts that allows the E-government system to function according to pre-agreed specification. The government could collaborate with the private-sector and businesses in Public-Private-Partnership ventures towards joint development programmes which has the potential to lower cost of government and improve efficiency for every E-government Stakeholder. Academic researchers could also help bridge the gap between research and practise by providing research knowledge and evidence that can help align industry and government Agencies in ways that can help to develop better E-government systems that would help in the delivery of valuable public services.

POST-DEVELOPMENT PHASE

Managing E-government process performance

Due to the iterative nature of E-government system design and implementation, continuous appraisal and re-appraisals of E-government systems should be carried out on a regular basis to ensure that the systems are functioning as intended and services are accessible and meet the needs of the public.

System Maintenance and Upgrades

E-government systems are not static; hence, the need for constant reviews of information are essential if they are to be kept current and up to date. Because technology is continuously evolving, E-government systems must equally be kept up to date for it to continue to serve the public as intended. Contents on webpages should be updated regularly and monitored to ensure that the services provided are relevant and current.

E-government regulators should also conduct regular inspections of the E-government systems to ensure they meet approved standards of operation to retain public trust and confidence in the E-government systems.

3.13 E-GOVERNMENT DEVELOPMENT CONSENSUS-BUILDING

The use of web-based technologies to deliver public services that promotes good governance has been well-documented in Information Systems and related technologies literature. However, the benefits of using modern cutting-edge technologies powered by the Internet to improve government has not had visible or transformative effect in public-sector organisations in Nigeria when compared to countries with advance technologies. Evidence of the poor uptake and adoption of ICTs in the public-sector organisations in government institutions in Nigeria is well-documented in E-government literatures and in the United Nations E-government surveys. Literature shows that Nigeria has consistently scored low ratings in E-government surveys that were conducted over the past two decades.

Although there have been a few E-government frameworks developed to help drive E-government initiatives in Nigeria, they have not been adequate, neither have they served the intended purposes of improving public service delivery due to lack of empirical evidence to support the framework development. Adequate attention has not been given to the importance of Stakeholder's involvement when developing and implementing previous E-government frameworks available for use in Nigeria which in turn has resulted in low adoption and uptake of E-government.

The researcher has proposed a new E-government framework - one that is empirical and considers inputs from Stakeholders of E-government systems in Nigeria. The researcher believes that a careful study of the factors hindering and promoting E-government in

Nigeria can be used to develop a new framework that captures the public sentiments and considers inputs resulting from a careful study of the E-government services of the Lagos State government and by extension the country as a whole. The researcher believes that by extending previously known E-government framework in Nigeria with suggestions from E-government Stakeholders in Nigeria, the consensual E-government framework developed would not only be acceptable to public-sector leaders, but capable of adoption and use by significant numbers of the populace.

To this extent, a consensus-building mechanism was embarked upon to determine what sorts of elements could be used to strengthen the E-government frameworks in existence in Nigeria. The Delphi process method was used to engage E-government experts with a view to identifying elements that can influence E-government development in Nigeria and the responses developed into survey questionnaires.

The Delphi method is a process used to repeatedly sample opinions from a small group of subject experts until there is a consensus about selecting the factors, predicting problems, and resolving the problem (Choi *et al*., 2016). In this study, expert surveys were conducted twice using questionnaire e-mails and face-to-face interviews to obtain a consensus. The outcome of the literature reviews and experts interviewed resulted in the selection of the variables for the conceptual framework and questionnaire items for this research enquiry.

3.14 OPERATIONALISATION OF CONCEPTUAL FRAMEWORK

The operationalisation of the research conceptual framework explained how the variables of the framework were measured and validated. The principal tool for operationalising the conceptual framework is by means of survey instruments. The survey mechanism included face-to-face interviews, open and closed-ended questionnaires and Likert scale questionnaires were used to allow the research participants express their views on E-government development in Nigeria and suggestions on ways to improve the existing systems.

The survey tools were developed through a process that involved the identification, classification and categorisation of all the factors that were identified from the literature reviewed and research interviews.

3.15 CONCLUSION

Recent E-government surveys by the United Nations have pointed to the 'siloed structures' and the vertical and horizontal fragmentation of public-sector administrations as a significant setback for implementing E-government systems in emerging economies around the world (U.N., 2012,14,16). The public-sector organisations in Lagos State of Nigeria are not an exemption to this observation. Government Departments existing in silos hinders easy information flow among public-service employees residing at different, but equally siloed governmental Agencies within the Lagos State government secretariat and across public-sector institutions in Nigeria.

The use of web-based technologies to deliver public services across organisational boundaries has been well-documented in literatures. However, the benefits of using innovative technologies to improve governance have not had visible or transformative effect in public-sector organisations in Nigeria. Evidence from research visits and literatures pointed to poor uptake and adoption of ICTs across all tiers of public-sector organisations in Nigeria.

To improve E-government development in Nigeria, additional Information Technology constructs must be considered along existing E-government variables that have been examined by previous E-government researchers in Nigeria. In doing this, the researcher explored the Network process and cross-agency collaboration as additional constructs needed to strengthen and extend existing E-government frameworks in Nigeria.

The variables used in this conceptual framework were sourced from extant E-government literatures and documents available in the public domain.

The next chapter will discuss the methodology adopted for conducting this research enquiry, highlighting the various steps taken to achieve the research aim and objectives.

CHAPTER 4

THE RESEARCH STRUCTURE AND METHODOLOGY

4.0 INTRODUCTION

Chapter four discussed the research methodology used for this work. In selecting a research methodology, careful attention is given to the critical factors that will affect the outcome of the research work. The characteristics of a research inquiry will profoundly influence the selection of an appropriate research strategy (Yin, 2003). These characteristics include the research topic, the objectives, research questions and the specific nature of the research problem. Some other important factors that may affect the outcome of the research study are access to research data, access to the research sites, the researcher's experience and skills, and the length of time allowed for conducting the research work (Creswell & Plano Clark, 2011; Saunders et al., 2012; Yin, 2014).

Chapter four described the research methodology and discussed various types of research philosophy with a brief overview of the common research philosophies such as positivism, interpretivism, realism, and pragmatism. Chapter four identified the researcher’s chosen philosophical stance and provided the justification for its adoption and use for the research study. Chapter four also discussed different kinds of research methods and approach and provided a detailed discussion on the research methods, designs, strategies and procedures that was adopted in this research work. The chapter explained the researcher’s choice of using mixed-methods research for the study, and the rationale for the use of an exploratory sequential design approach.

Chapter four also detailed the data collection techniques available to researchers together with the sampling methods used for the research. The chapter provided a brief explanation of the researcher’s data collection technique, his choice of sampling methods, and the types of research instrument used for the data collection. A brief discussion on ethical issues around data collection and use was also discussed in this chapter.

Chapter four discussed in detail how participants were selected for the study and also highlighted the reasons for the selection of the organisations used in the study and the criteria used in selecting the research participants and case study organisations.

Chapter concluded with brief remarks on the analysis of the research findings, together with the limitations and delimitations of the study.

4.1 RESEARCH PHILOSOPHY

Philosophy of research alludes to the beliefs about the world we live in and interact with. Two central assumptions shape the way of thinking about these beliefs: ‘ontology' and ‘epistemology' assumptions (Burrell & Morgan, 1979).

Ontology refers to the nature of the world or reality. The study of ontology produces an understanding of knowledge. To the realist, the social phenomena have an existence which is independent of its social actors. Epistemology, on the other hand, is concerned with the study of knowledge and what we accept to be valid knowledge. Epistemology answers the question of how things work and what are the best ways to acquire knowledge (Lincoln & Denzin, 1994).

The research philosophy chosen by the researcher enables the researcher to interact with the objects of investigation thereby allowing the researcher to gain deeper understanding of what is being investigated (Easterby-smith *et al.,* 2012).

Literature explains four major categories of theoretical paradigms available to social researchers vis-à-vis positivism, interpretivism, realism, and pragmatism.

4.1.1 Positivism

Positivist studies in general attempts to test theories to confirm the validity of the theories and thereby establish a predictive outcome for an observable phenomenon. Information Systems research could be classified as positivist if there was evidence of formal propositions, quantifiable measurements of given variables, hypothesis testing, and drawing of inferences about a phenomenon from the sample for a stated population. Positivism rely on quantitative techniques and follows a deductive approach. It makes use of the results that are confirmed as valid through experimentation to attribute properties or to explain similar cases. According to Ryan, the positivists researcher believes that “research in the social world can be carried out in a value-free, objective way through experiment and observation and interpreted by rational deduction” (2006, p.12). To this end, one can see how the position of the positivist relates back to an earlier ontological position that argued in favour of an objective reality that stemmed from an empirical observation or a quantifiable measurement of some given variables. The above observation corroborates the same viewpoints that Davies had earlier picked up on when he suggested that the core philosophical position of positivism is that all factual knowledge rests on the positive information gathered from observable experiences, and that only analytic statements can be regarded as true (Davies, 2007).

4.1.2 Interpretivism

Interpretive studies generally try to understand a phenomenon through the meanings that people ascribe to it (Rea & Parker, 2006). Walsham (2005) is of the view that interpretivism is a doctrine that emphasises the knowledge about what is taken to be an objective reality should emanate from the social construction of the researcher. In Information Systems research, an interpretivist approach would aim to provide an understanding of a given Information System and its processes within the context of the study at hand. Interpretivist belief that social reality is subjective because it is socially constructed. Therefore, individuals are entitled to their own sense of realities, thus permitting multiple realities of any given phenomenon. Orlikowski and Baroudi (1991) suggested that interpretivism studies should assume that people create and associate their subjective meanings about phenomena as they interact with the world around them. There is the general understanding that social constructions such as languages, shared meanings, perceptions, consciousness and understanding enable reality to be accessed and communicated to other individuals or a group. Although critics of interpretivist philosophy often point to the lack of generalisation as a weakness, it must be understood that the external validity of research findings in a social context is dependent on many factors that makes it particularly difficult to replicate in conditions that are not similar to where the research was initially conducted (Saunders *et al*., 2012). Where research findings could not be generalised, interpretivism would allow the researcher to transfer and apply qualitative data to other similar perspectives (Walsham 1995; Myers 1997; Myers & Avison 2002; Collis & Hussey, 2003; Easterby-Smith *et al*., 2012).

4.1.3 Realism

Realism is a philosophical position that closely relates to scientific enquiry. Realist approach suggests that "the essence of realism is that what we sense is reality: that objects have an existence independent of the human mind" (Saunders *et al.*, 2012, p.136). Various researchers have sought to explain realism in its various forms and have provided explanations as to the significant influence it has on the philosophy and methodology of the Social Sciences. Detailed explorations of the implications of realism as used in research studies can be seen in the work of scholars in the field of critical realist tradition (Sayer, 2000). Although researchers have explored different versions of realism vis-à-vis 'natural realism', 'experimental realism', and 'critical realism', a common thread in the

position of the realists is the recognition that there exists a real world independent of individual perception or social constructions (Putman, 1999; Sayer, 2000).

4.1.4 Pragmatism

Pragmatism is a philosophical position that allows the researcher the liberty to use multiple methods of data collection techniques within a single research to inform the research enquiry and to proffer answers for the research questions. Pragmatism is typically associated with the mixed-method research approach. According to Creswell and Plano Clark, in pragmatist enquiry, “the focus is on the consequences of research, on the primary importance of the question asked rather than the methods, and on the use of multiple methods of data collection to inform the problems under study” (2011, p.41). Pragmatist approach is oriented towards ‘what works’ in real life practice (Creswell & Plano Clark, 2011). The pragmatist philosophy allows finding a compromise between the interpretivist and the positivist philosophies pointing out that the research question should be the priority, and “not the purity of an ontological or epistemological stance about what the social world is like” (Denscombe, 2008, p.23). Teddlie and Tashakkori suggested that "Pragmatists consider the research questions to be more important than either the method they use or the worldview that is supposed to underlie the method" (1998, p.21). They further asserted that "most good researchers prefer addressing their research questions with any methodological tool available" (1998, p.21). Pragmatism allows room for flexibility in the research approach, contrary to the Positivist, Interpretivist, and the Realist who would find it very difficult to allow the combination of methodological tools to explain an otherwise complex phenomenon such as E-government research.

4.2 JUSTIFICATION FOR THE RESEARCH METHODOLOGY

The researcher has chosen the pragmatist philosophical stance for this research enquiry. Social constructionist E-government studies hold an epistemology that assumes the focus of finding out is the particular constructions and meanings individuals hold about various facets of E-government (Heeks & Bailur, 2007). According to (Easterby-Smith *et al.*, 2012), social constructionist philosophy could assume the same meaning as the interpretivist philosophy. The philosophical assumption is concerned with understanding the individual and unique truths with emphasis on understanding, and not objectivism (Farquhar, 2012); this follows the assumption that humans interpret the world they live

in and ascribe meanings to it the way they perceive it to be (Saunders *et al.*, 2012). However, to understand how things work - E-government in this case - the researcher needs to investigate the various factors at play within the E-government phenomenon in the Nigerian context, using whatever method of inquiry that is best suited to the study - its practicality. An observable phenomenon such as E-government with its multidisciplinary nature holds subjective meanings and can provide acceptable knowledge based on the nature of the study and what the research question(s) are (Creswell & Plano Clark, 2011; Saunders *et al*., 2012). The research questions in this study are important considerations that guides the enquiry and the research questions essentially informed the choice of research methodology that was adopted by the researcher.

In choosing an epistemology and theoretical perspective, the researcher has considered his perception of the world and how he sees things in it. Settling for pragmatism as a choice of epistemology is based on the fact that to satisfy the aim of this research, and to adequately answer the research questions, the most viable option is to conduct the research using multiple methods of data collection and from a wide variety of sources. This is an acceptable approach with is supported by the mixed-method research approach. The research starts with qualitative enquiries and move into quantitative enquiries to interpret and confirm the research findings.

The researcher's chosen methods and choices might look inadequate to some researchers, but he stands by this choice and takes confidence in the words of Coghlan and Brannick which stated that: "Researchers' epistemological and ontological perspectives legitimate their own distinctive way of doing research and determine what they consider as valid, legitimate contribution to knowledge or theory irrespective of whether we called it development, confirmation, validation, creation, building or generation" (2005, p.5).

4.3 RESEARCH APPROACH

According to Saunders *et al.*, (2012) the extent to which one is clear about the theory from the onset of the research raises important questions regarding the design of the research project. This is portrayed in the research approach based upon the reasoning the researcher adopts which could be any of inductive, deductive, or abductive.

4.3.1 Inductive approach

Saunders *et al.,* stated that inductive approach is a "research approach involving the development of a theory as a result of the observation of empirical data" (2012, p.672). In inductive inference, the logic is that known premises are used to generate untested conclusions, while 'generalisability' is from the specific to the general (Saunders *et al.,* 2012). The use of data in inductive approach according to Sanders et al., is "to explore a phenomenon, identify themes and patterns and to develop a conceptual framework based on the patterns and themes earlier identified" (2012, p.144). The inductive approach allows for theory generation and theory development.

4.3.2 Deductive approach

Saunders *et al.,* explained that deductive research approach is a "research approach involving the testing of theoretical proposition by the employment of a research strategy specifically designed for the purpose of its testing" (2012, p.669). The logic in deductive research approach is that when the premises are true, the conclusions must also hold true. The data collection in deductive research approach is basically to evaluate the proposition or hypothesis related to existing theory with the view of either confirming or rejecting the theory. The generalisability in deductive research approach is from a general statement to a more specific statement (Saunders *et al*., 2012).

4.3.3 Abductive approach

In abductive research studies, the logic is that known premises are employed to generate testable conclusions. "Generalisability" is from the interactions between the specific and the general. Data collection in abductive studies are used to explore a phenomenon, identify themes and patterns. The themes identified in the study are used to develop a conceptual framework and tested through data triangulation from subsequent data collections. Saunders *et al.,* observed that in abductive studies, theories can be generated or modified by "incorporating existing theory where appropriate, to build new theory or modify existing theory" (2012, p.144). This study adopts the abductive research approach as it does not seek to move from theory to data (deduction) or data to theory (induction), but to move back and forth combining both deduction and induction approaches to inform the study and proffer answers to the research questions.

This research study began by reviewing literatures on E-government around the world and in Nigeria to gain deeper understanding of the E-government phenomenon in a general sense before investigating the E-government phenomenon in the Nigerian context.

A review of the United Nation's E-government surveys available in the public domain revealed that Nigeria has consistently been rated very low on the E-government development index when compared to other highly populated countries (U.N, 2012; 14, 16, 18). The low E-government ranking and ratings for Nigeria appears not to reflect the financial investment the Nigerian government claims to be investing in developing E-government practise for the benefit of the citizens of Nigeria.

This research work examined various factors impeding and facilitating E-government development in Nigeria with a view to develop a consensual E-government framework for collaborative E-government participation in Nigeria that is acceptable to all Stakeholders of E-government in Nigeria and capable of improving E-government adoption and use in Nigeria.

4.4 PILOT STUDY

A pilot study is a small-scale study designed to test the viability of the interview checklist, questionnaires, or an observation schedule to minimise or prevent the likelihood of survey respondents from encountering problems when answering the research questions that are set out in the research questionnaire (Saunders, *et al*., 2012). The pilot study also allows the assessment of the question's validity and ensures that data recording methods have been thoroughly checked and that the data collected are reliable and of good quality. The pilot study provides the researcher an opportunity to perfect the survey instruments before its actual use in the research.

4.5 RESEARCH STRATEGY

Research strategy can be defined as a plan of action that sets out how the researcher intends to conduct a research in a systematic and well-organised manner towards achieving the aims and objectives of what is being researched. According to Saunders *et al*., (2012), a research strategy is a plan of how the researcher intends to go about answering the research question(s). The research strategy can serve to provide the overarching plan that guides and directs the research process and how the research is to

be conducted with regards to answering the research question(s) (Bryman, 2008; Saunders *et al.*, 2012). The rationale that informs a research strategy choice is inherent in the research aim, objectives, and questions (Farquhar, 2012).

4.5.1 Case Study

Case study research can be described as a research strategy that collects considerable amount of information for learning through analytical investigation from multiple sources about a specific subject or phenomenon within its real-life context, especially when boundaries between phenomenon and context are not clear (Yin, 2009). Case study strategy makes use of detailed contextual analysis of a single individual, group, or event to explore the underlying principles of the phenomenon of interest. Case study inquiry mostly rely on the use of multiple sources of evidence (Yin, 2009). Case study strategy is mostly used in exploratory and explanatory research because of the considerable ability to produce answers to 'why', 'what' and 'how' questions (Saunders *et al.*, 2012). Different data collection techniques may be employed in the case study strategy for the purpose of triangulation to either confirm or reject data evidence that were collected. Examples of data collection techniques that may be employed are interviews, documentary analysis, observations and questionnaires (Saunders *et al.*, 2012). This study briefly examined documented E-government case studies in the public domain to gain deeper insight and understanding of the E-government phenomenon. It explored the internal and external factors of E-government development, the benefits and challenges of E-government development around the world and in Nigeria, E-government key actors and recommendations for good practice guidelines, as well as factors facilitating development and implementation of E-government frameworks that are usable within public-sector organisations for public service delivery across various tiers of government.

4.5.2 Experimental Study

Experimental research is a form of research strategy that has its root in natural science. Experimental research strategy is not frequently used in management research (Saunders *et al.*, 2012). Experimental study can either be carried out in the laboratory or in field experiments. Experimental studies are conducted under controlled conditions and environment to explain the relationship between 'cause and effect'. The aim of an experiment research is to study causal links -- whether a change in one independent

variable produces a change in another dependent variable. Although in laboratory research, studies are conducted within a controlled environment often with special treatments of different groups to contrast the precise relationships among the variables. Field experiments on the other hand are conducted in real-life situations. The object being investigated is subjected to direct observation by the researcher to gain first-hand knowledge of the observable phenomenon.

4.5.3 Survey Study

Survey research can be described as a research strategy that involves sociological inquiry using questionnaires to elicit information from the research participants about their thought processes and behaviours. According to Ashaye, survey research has its origin in Victorian Britain and used by social reformers "to collect information on poverty and working-class life" (2014, p.136). Although survey research has been used in studies on health services, it is also widely used in applied social research. In survey research, the researcher makes use of questionnaires to simplify questions to be asked and to consider the samples to be analysed as part of the survey research. This process forms an integral part of the multi-methods triangulation necessary for developing in-depth understanding of the phenomenon being investigated.

4.5.4 Action Research

Action research is an emergent and iterative process of research that is designed and developed to proffer solutions to real problems encountered within organisations through processes of collaborative and participative approach using multiple sources of knowledge (Saunders et al., 2012). The action research begins within a specific context and research question(s), but as the research passes through several iterations, the focus may change as it develops. Saunders *et al.*, observed that “each stage of the research involves a process of diagnosing or constructing issues, planning action, taking action and evaluating actions (2012, p.183). Participation is a critical factor in action research. Greenwood and Levin (2007) posited that Action Research is a social process involving the members of an organisation under inquiry. The process allows for the Action Researcher to work with organisation members, first as an observer, then as a participant in the work processes of the organisation, and finally as a facilitator or teacher to improve the work processes of the organisation in all its iterative stages (Greenwood & Levin,

2007). Results obtained in action research would often have implications for the research participants and the organisations involved beyond the research project itself (Greenwood & Levin, 2007; Coghland & Brannick, 2010). According to Saunders *et al*., action research strategies are generally oriented towards "the management of a change and involving close collaboration between practitioners and researchers" (2012, p.665).

4.5.6 Ethnographic research

Ethnography is a research strategy that enables the researcher to focus on describing and interpreting the social world through direct contact with the object(s) of interest or through first-hand experience in the field of study (Saunders *et al*., 2012). Ethnography is particularly suitable for the study of people in groups who interact with one another in the same kind of environment, this could either be within the same organisation, community, or society (Denzin & Lincoln, 2005). There are basically three kinds of ethnographic research 1) Realist Ethnography which believes in objectivity and factual reporting of what is true with regards to what have been observed through facts and data about artefacts and symbols, routines and norms, customs and practices, or structures and processes. The observations from the Realist ethnographer can be reported using standardised categories that produces quantitative data. 2) Interpretive ethnography focuses more on subjective reporting than on objectivity (Saunders et al., 2012). The Interpretive ethnographer looks out for multiple meanings in the socially constructed interpretations from various individuals who participated in the study rather than attempting to find a single true meaning. 3) Critical ethnography focuses on the exploration of the impacts of power, authority and privilege on those who have been subjected to its influence or marginalised by them (Saunders et al., 2012). The Critical ethnographer assumes the role of an advocate and tries to bring about change within an organisation or society through a better decision-making procedure, regulation, governance, or organisational treatment.

Table 13: Brief outline of the research study

	RESEARCH DIMENSIONS	DESCRIPTION
1.	Phenomenon	• E-government • e- Government system represents a paradigm shift from the traditional mode of bureaucratic way of governance. Governments around the world are embracing E-government to achieve their goals of good governance through inclusive citizen participation, and delivery of public services in fast, efficient, and effective manner using ICT and the Internet. • There is no known universally acceptable framework for E-government development and implementation. However, attempts are constantly being made develop and adapt best practices of E-government framework to address the peculiarities of each host nation. • United Nations E-government Surveys has consistently rated Nigeria low in its E-government uptake compared to other highly populated and emerging economies around the world. This calls for an examination of those factors responsible for such poor rating and ranking.
2.	Epistemological stance	• Pragmatism • In pragmatist enquiry the research focuses on "the consequences of research, on the primary importance of the question asked rather than the methods, and on the use of multiple methods of data collection to inform the problems under study" (Creswell & Plano Clark, 2011, p.41).
3.	Research Aim	The aim of this research is to examine factors facilitating and impeding the development of E-government in Lagos State of

		Nigeria and to produce a consensual E-government framework of best practise workable across all tiers of government in Nigeria.
4.	Research questions	• What are the major factors affecting the development of E-government in Lagos State government MDAs and across governmental organisation in Nigeria? • Can inter-organisational 'Networking processes' strengthen the development of E-government in Lagos State of Nigeria and improve E-government adoption and use across all tiers of government in Nigeria? • Does inter-organisational collaboration exist between public institutions in Lagos State of Nigeria that could promote and encourage the adoption and use of E-government in Lagos State and across public institutions in Nigeria? • Can reformation of the existing public-sector organisations in Lagos State improve the development of E-government in Lagos State and replicable across other States in Nigeria?
5.	Theory	• Technology, Organisation, and Environment (TOE) Theory • Stakeholders Theory • Networking Theory • Collaborative Theory
6.	Research Methodological approach	• Mixed methods research approach • Exploratory sequential research design • Case study and Survey research strategy
7.	Unit of analysis	• Public-sector organisation's websites.

8.	Institutional focus	• Good governance • Transparency and efficiency in government

Source: Research author

4.6 QUALITATIVE RESEARCH METHOD

The qualitative research method has its root in social science. It was developed to enable social science researchers to analyse social phenomena occurring within their society. Qualitative studies usually represent data as narration carried out by the researcher through self-immersion in the research field while studying real-life situations and experiences within their natural settings. A review of information system literature suggests that qualitative research methodological approach often translate observable phenomena within the Information System discipline through the meanings people ascribe to them and producing understanding that relates to their perspectives within their immediate surroundings or environment.

Qualitative research approach is an inductive process; it uses specific instances to make generalisations of similar situations. Qualitative data that has been carefully and extensively collected should include a variety of textual materials, pictures or images as well as sounds and recordings if adequate inferences are to be drawn from such data that will satisfy the purpose of the enquiry. The data collected should be rich and holistic; capable of revealing patterns within complex situations thereby useful in providing explanations to strengthen the researcher's understanding of the phenomena being investigated (Gaillers, 1992; Hussey & Hussey, 1997; Lee & Baskerville, 2003; Saunders et al., (2012). According to (Pierce, 2008), the strength of a qualitative approach is its ability to understand and explain the complexities of social life through in-depth interviews, observations, and induction processes. Pierce further explained that qualitative study consists of a normative dimension and a greater focus on verbal and other communications that a quantitative method does not possess (Pierce, 2008).

In examining the relationship between variables, it is common practice for researchers to use a qualitative research technique, though not as widely used when compared to quantitative researchers (Dambrin & Lambert, 2012).

4.7 QUANTITATIVE RESEARCH METHOD

Quantitative research method is widely believed to have arisen from investigating natural phenomena using a scientific approach. It entails positivist philosophical assumptions and a deductive methodological approach that uses numeric data in conducting research (Saunders, *et al*., 2012). The quantitative method can be described as an extreme of empiricism, which relies on control and explanation of the phenomenon (Altameem, 2007). It is a research method that tends to measure "how much" or "how often" (Nau, 1995). Creswell (2003) suggested that the quantitative approach is appropriate to use when the problem is mainly to identify factors that influence an outcome, understand the best predictors of outcomes, or the utility of an intervention. Quantitative research methodological approach in social sciences has the advantage of being considered in an interdisciplinary field that uses multi-method approach to gain deeper understanding on human experiences (Bryman, 1984; Creswell, 1994; Oates, 2006).

Quantitative research method supports structured and open research strategies often using large samples sizes which are often anonymous to participants. Quantitative methods use tests and formal instruments as part of its enquiry process. To collect the research data in quantitative enquires, the researcher often prefers to use questionnaires which allows for ordering and ranking of the factors and characteristics of the research variables. Quantitative research data are 'hard and reliable' because of hypothesis testing and the establishing of theory. For quantitative studies to be accepted as valid, the results obtained from the enquiry must be accurate and reliable.

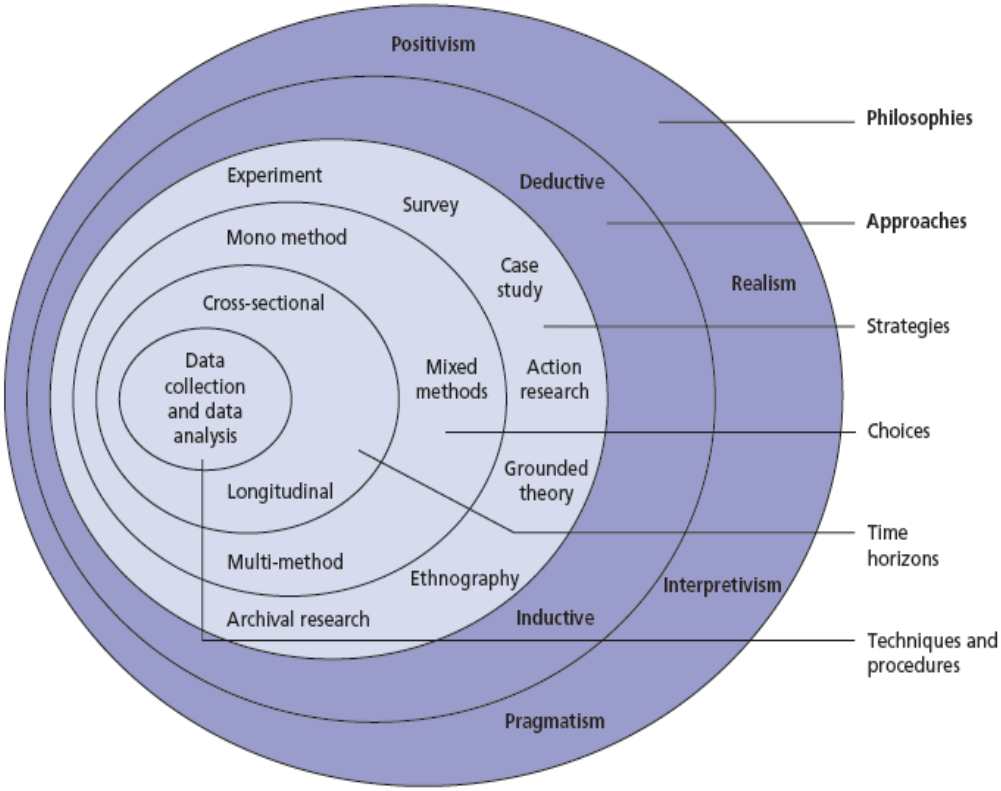
4.8 MIXED METHOD RESEARCH

Mixed method research is the combination of both qualitative research paradigm and quantitative research paradigm in a single study. The formative period in the development of the mixed method research approach began in the late 1950s and continued up until the 1980s (Creswell & Plano Clark, 2011). Creswell *et al.*, citing (Bryman, 1988; Guba & Lincoln, 1988) stated that: "mixed methods developed during the 1970s and 1980s when qualitative researchers were adamant that different assumptions provided the foundations for quantitative and qualitative research" (2011, p.25).

The mixed methods approach has been identified as the most appropriate method to use when the researcher opts for pragmatism as a philosophical approach that allows the

researcher to adequately answer the research questions and address the research objectives (Tashakkori & Teddlie, 2003a; Denscombe, 2008; Creswell & Plano Clark, 2011). In addition to this, the mixed methods approach also allows for data triangulation to cross-check information and research data from different sources of data captured for an enquiry. According to Creswell and Plano Clark "a combination of both forms of data provides the complete analysis of problems" (2011, p.21) and overcoming "the deficiencies of single-method studies" (Lowe, 2007, p.146). This research work adopts the mixed-method research approach.

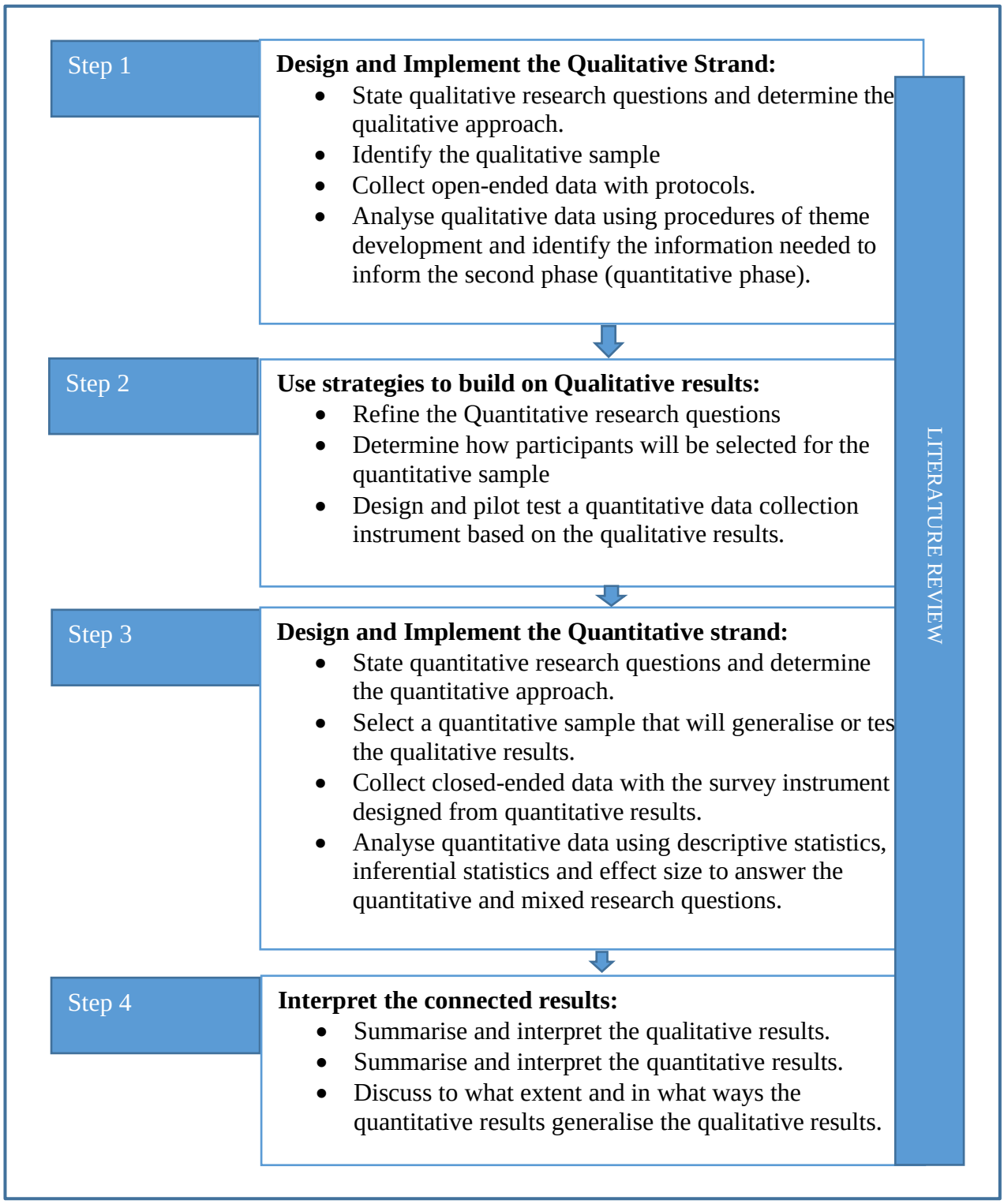
Figure 22: Research Onion Illustration.



Source: Adapted from ‘Research Methods for Business Students’, Saunders *et al.*, (2012)

4.9 THE RESEARCH DESIGN

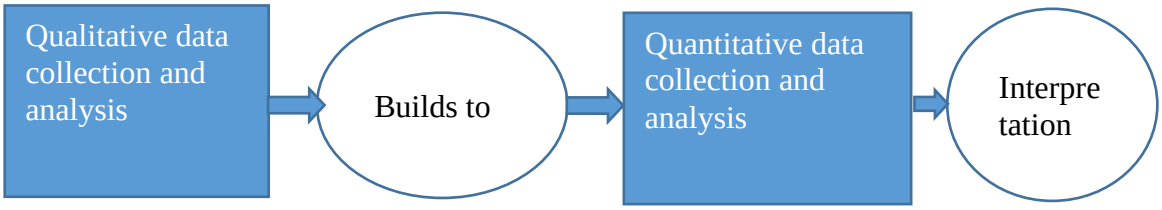
Figure 23: The research design illustration



Source: Adapted from 'Mixed Methods Research', Creswell and Plano Clark, 2011.

Building on the results of the first phase of the research, the researcher proceeds to the second phase of the design which is the quantitative phase to test or generalise the initial findings (Creswell & Plano Clark, 2011). The researcher concludes by interpreting how the quantitative results developed from the initial qualitative phase supports the research findings. The diagram below presents an Exploratory sequential design research method followed by the flowchart of the procedures followed while implementing the exploratory sequential design for this research work.

Figure 24: Diagrammatic representation of Exploratory sequential design research method.



Source: Adapted from 'Mixed Methods Research', Creswell & Plano Clark (2011).

Strengths of the exploratory research design

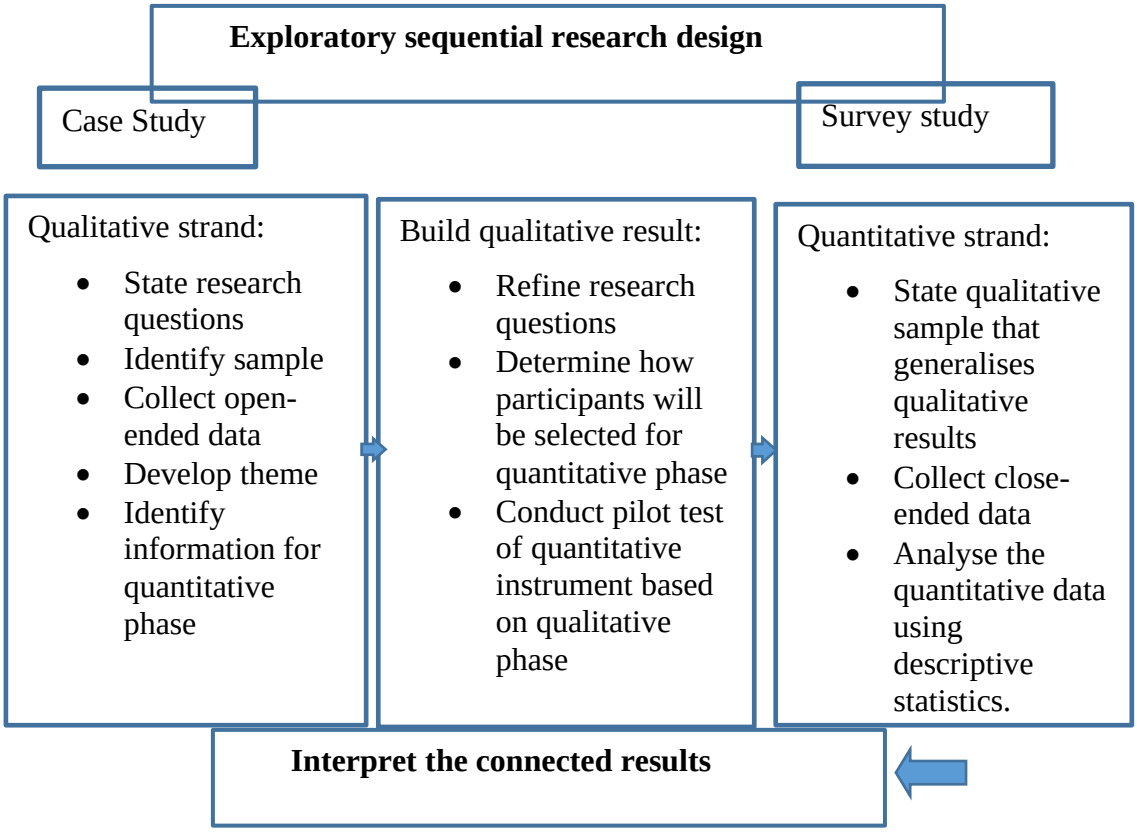
The sequential exploratory design approach is generally conducted in two-phases with only one type of data collected at a time. According to Creswell and Plano Clark (2011), advantages of the exploratory design are 1) Separate phases make the exploratory design straightforward to describe, implement, and report, 2) Although exploratory design typically emphasises the qualitative aspect, the inclusion of a questionnaire component can make the qualitative approach more acceptable to quantitative-biased audience, 3) the researcher can produce a new instrument as one of the potential products of the research process, and 4) the design is useful when the need for a second, quantitative phase emerges based on what is learnt from the initial qualitative phase.

Challenges of the exploratory research design

There are several difficulties associated with using the exploratory design process. Creswell and Plano Clark (2011) enumerated some of these challenges as 1) Due to the two-phases required to develop and implement the design, more time would be needed for the research work, 2) the researcher is encouraged to use a small, purposive sample in

the first phase and a larger sample of different participants in the second phase to avoid questions of bias in the quantitative strand, 3) researchers need to decide which data to use from the qualitative phase to build the quantitative instrument and how to use these data to generate quantitative measures, and 4) Researchers must ensure taking appropriate procedural steps to ensure that the scores developed on the instrument are valid and reliable (Creswell & Plano Clark, 2011).

Figure 25: Exploratory sequential research design using case study and survey strategy.



Source: Adapted from 'Mixed Methods Research', Creswell and Plano Clark, 2011.

The criteria for adopting a mixed research strategy of both case study and survey study is based on literature as well as suggestions from E-government experts that were consulted during this research work. The research follows an exploratory sequential design; therefore, the research strategy adhered to the process of conducting exploratory sequential research. Exploratory sequential research was carried out in two phases: 1) the qualitative phase which explored themes related to E-government, developed survey instruments, and identified variables that provided vital input for the quantitative phase. 2) The quantitative phase used data and information from the qualitative phase to design

the survey instruments which allowed for an examination of the variables obtained from the qualitative inquiry. The importance of adopting both case study and survey strategy in a mixed-method research is that of validity and acceptability (Creswell & Plano Clark 2011; Saunders et al., 2012). When results from the quantitative strand of the exploratory sequential research design confirm those of the qualitative strand, not only does the outcome satisfy both quantitative-biased audiences and qualitative-biased audiences, but it also provides an avenue to triangulate on data and information used for the research enquiry.

4.10 THE MIXED METHOD RESEARCH PROCEDURE

The type of research design and procedure a researcher chooses is informed by several factors that are deemed appropriate to enable a successful outcome for the overall aim and objectives of the study. According to Saunders *et al*., "your research design is the general plan of how you will go about answering your research question(s)" (2012, p.159). The research design should be able to clarify the sources of data used in the research, how the data collected will be processed and analysed, discuss ethical issues and constraints that was encountered during the research process, and should show that the researcher has carefully thought through the various elements of the research design (Cavana et al., 2001; Creswell & Plano Clark, 2011; Saunders *et al.,* 2012). To accomplish the aims and objectives of this study and to satisfy the research questions, the researcher has chosen to use a mixed methodological approach. The aim of the study is to examine factors facilitating and impeding the development of E-government in Nigeria with a view to producing a consensual E-government framework that is acceptable to E-government Stakeholders in Lagos State and by extension across Federal and State governments in Nigeria.

The field research procedures in social research enables the researcher to explore the world of the participants, and to understand various concepts and nuances in respect of a phenomenon under investigation. Although the approach and methods used vary across disciplines, the common denominator is that the researcher is expected to have a clear and well-organised plan that will enable him to meet his research objectives and take care of unforeseen events that may arise during the research (Yin, 2003; 2009).

The mixed-method research comprises mainly of six principal design methods. The choice of design methods should be carefully considered and should inform designs that reflects interactions, priority, timing, and mixing (Creswell & Plano Clark, 2011).

This research adopted the exploratory sequential design because it allowed the researcher the freedom to explore the nature of the research problem even though the outcome was unpredictable from the onset (Saunders, et al., 2012). In conducting exploratory research, the researcher carried out a comprehensive literature review in the field of E-government study, arranged and conducted a focus group discussion, and interviewed experts in the field of E-government both in theory and in practise.

The exploratory sequential design uses sequential timing to order its development phases (Creswell & Plano Clark, 2011). The first phase of the design begins with the collection and analysis of the research data obtained from the qualitative enquiries through multiple sources. These enquiries according to Creswell and Plano Clark, explores various narrative to "identify conditions, contexts, strategies, and consequences" (2011, p.71).

To satisfy the qualitative strand of this research enquiry, the researcher had reflected on the qualitative research questions for this research work.

The reflection period allowed the researcher time to carefully think about the best way forward vis-à-vis selection of adequate resources and instruments to conduct the research inquiry. To address the research questions at the qualitative phase of the research enquiry, the researcher started with a comprehensive review of relevant E-government literatures to gain deeper understanding of the E-government phenomenon and its development both internationally and in the context of adoption and use by employees of the Lagos State government and MDAs across Nigeria.

Having gained an appreciable understanding of the E-government phenomenon in Nigeria and what the issues are, the researcher embarked on purposive sampling to identify and approach subject experts who can provide in-depth and detailed information about E-government developments in Nigeria. The purposive sampling technique allowed the researcher to use open-ended questions to carefully collect rich and holistic data from the research participants. The subject knowledge experts interviewed included a principal officer at NITDA, the Director of the Computer Centre at the Lagos State Ministry of Science and technology, and a senior engineer and information officer at the Lagos State Ministry of Science and Technology, and a few independent IT consultants. The research participants volunteered information on their various experiences of E-government developments and implementation practices in Nigeria. The qualitative data gathered from both the literature reviews and the purposive sampling of subject experts in E-government were analysed and developed into multiple E-government themes.

Information collected from the emergent themes were subsequently used for developing the quantitative phase of the research. The researcher used the data collected from the qualitative enquiry as inputs for the quantitative constructs that formed the basis for the research instrument. The quantitative research questionnaire was pilot tested and refined before using them in the quantitative phase of the research.

4.11 SAMPLING METHOD

In selecting the participants for this research, the researcher considered the objectives of the research with regards to the population size. Population here refers to a group of individuals (Lagos State government employees) who would be ideal for the objectives of this study. Due to the size of the population, it is essential to extract samples that will be representative of the population. According to Saunders *et al.*, (2012), sampling is a research technique that is used for reducing the quantity of data needed to be collected by focusing only on data from a sub-group as opposed to all possible cases or elements. It is important that in choosing samples that truly represents the population, the samples must be representative of the population and be free from bias (Pruzan, 2016). Citing Becker (1998), Saunders *et al.*, explained that "in selecting a sample to study, it should represent the full set of cases in a way that is meaningful, and which can justify" (2012, p.260). Barnett (2002), cited in Saunders *et al.*, argued that "using samples makes possible a higher overall accuracy than a census" (2012, p.261). Using sampling is important because it is not practicable to survey the entire population due to the limited time and financial resources available to the researcher.

Having adopted the exploratory sequential design paradigm, the researcher considered recommendations on the choice of samples and sample sizes that satisfies the requirements of the chosen research design. In a mixed-method exploratory research design, sampling occurs in two phases 1) The qualitative samples, and 2) The quantitative samples (Creswell & Plano Clark, 2011). The types of samples to use in an exploratory sequential research design are highly influenced by the data collection technique and decisions. Creswell and Plano Clark suggested that “the individuals who participate in the quantitative follow-up for the exploratory design are typically not the same individuals who provided the qualitative data in the initial phase” (2011, p.188). The use of different individuals in the quantitative phase of the research is to allow for generalisation, hence the use of a larger sample size than the qualitative strand.

4.11.1 Purposive sampling

Purposive sampling is a non-probability sampling also known as judgemental sampling. Purposive sampling is a sampling technique that relies on subjective judgement and allows the researcher to select cases that will help the researcher to best answer the research question(s) and to meet the research objectives (Saunders et al., 2012). Purposive sampling is ideal for use when the researcher is working with small sample sizes as in case study, and the case study is very informative (Neuman, 2005). Saunders et al., stated that purposive samples cannot be considered to be statistically representative of the total population. The rationale for using purposive sampling is dependent on the research question(s) and objectives.

4.11.2 Maximum variation (Heterogeneous) sampling

Heterogeneous purposive sampling also known as Maximum variation sampling. It allows the researcher to choose participants for the research who he considers having sufficiently diverse characteristics and can provide maximum variation possible in the data collected for the research (Saunders et al., 2012). Heterogeneous sampling enables the researcher to collect enough data to describe the main themes observable in a research work. Although using small samples have the risk of containing cases that differ from the research objectives, Patton (2002) argued that a differing case is a strength as this could possess an important value that may represent an emerging theme.

4.11.3 Justification for the choice of sampling technique

The researcher has chosen to use Heterogeneous sampling for this research work. To justify his choice, the researcher considered the research questions and the objective of his research as of primary importance. The researcher also gave considerable thoughts to recommendation from literatures on suitable choice of sampling when using a sequential exploratory research design. In addition, the researcher supported his choice of sampling technique with arguments from E-government literature.

Saunders et al. (2012) argued that when the nature of the research work consists of semi structured in-depth interviews in a heterogeneous population where the samples does not necessarily have to proportionally represent the entire population, then the researcher can consider using a small sampling size that is heterogeneous, inasmuch as sufficient data can be collected to enable the description of key themes that were observed. Also, when

the researcher does not have a sampling frame, nor required to make statistical inferences from the samples, then a relatively small sample size would be sufficient (Patton, 2002; Saunders et al., 2012). The use of heterogeneous sampling technique also requires the researcher to have a clear focus and key themes as prime consideration before choosing this sampling technique. The key themes of this research relate to factors promoting E-government development in Lagos State government of Nigeria.

Lagos State in Nigeria is a very diverse and heterogeneous state with inhabitants from many parts of the country residing and working in Lagos state public-sector organisations. Therefore, selecting samples from employees of selected Ministries and parastatals within Lagos State Government Secretariat in Alausa-Ikeja as representative samples for the target population is consistent with, and satisfies the requirements of heterogeneous sampling technique. The heterogeneous sampling technique also requires that the researcher have easy access to the research data (Saunders et al., 2012), this condition is satisfied in this study as the researcher had previously worked in the Lagos State Secretariat and still maintained valuable contacts that could help to facilitate the granting of permissions to conduct interview and administer questionnaires within the Secretariat. Although the research's aim is to investigate factors impeding and promoting E-government development in Nigeria, gaining access to research data in all the 36 different states in Nigeria is not feasible due to the cost implication and time factor, hence the researcher settled for purposive sampling techniques using data collected from employees of the Lagos State government. The diversity of the workforce of the Lagos state government makes the data collected rich and satisfies the conditions necessary for a mixed-methods research that uses small sample sizes while at the same time maintaining elements of generalisability and credibility. The researcher is confident that the sample chosen from the Lagos State Ministries are fitting representation of the public-service organisations across Nigeria. Efforts were made to augment the research quality and generalisation by using questionnaire response from larger number of research participants in the quantitative phase of the research work.

4.12 RESEARCH DATA COLLECTION TECHNIQUE

According to Saunders *et al*., (2012) the data collection technique is informed by the purpose of the research, the technique could either be qualitative, quantitative or a mixed-method of both. Yin (2009) explained that interviews and semi-structured questionnaires

are suitable for use in qualitative data techniques, while structured questionnaire is predominantly used in quantitative data collection techniques.

Qualitative data collection technique represents data as narration and is conducted through intense contact with field or life situation (Creswell & Plano Clark 2011; Saunders et al., 2012). The qualitative method comprises many attributes; most importantly, the qualitative data which focus is on naturally occurring, ordinary events in natural settings. On the other hand, the quantitative method can be described as an extreme of empiricism, which relies on control and explanation of the phenomenon (Altameem, 2007) cited in Abdalla (2012).

Citing Teddlie and Yu (2007), Creswell and Plano Clark stated that: "the purpose of data collection in a mixed-methods study is to develop answers to the research question"(2011, p.179). It is essential that when using mixed-methods, the researcher continue to remind himself of the research questions and continuously check whether the data he is gathering will provide answers to the research questions (Creswell & Plano Clark, 2011). The mixed-methods research approach collects and makes use of both qualitative and quantitative data obtained from multiple sources. Although the quantitative data analysis phase provides the opportunity to validate and generalise the data obtained through qualitative enquiry using statistical testing, care should be taken such that the selection of the quantitative instruments does not extend beyond those needed to answer the research questions.

This research work made use of both primary and secondary sources of data types. While the primary data are sourced through interviews, questionnaires and surveys, the secondary data were obtained through analysis of achieved documents, books, journals, magazines, and periodicals within the public domain. Content analysis of public websites relevant to the research was also examined to collect secondary data.

In this research work, data collection technique for the qualitative strand of the study involved reviews of the contents of government websites, archival documents, direct observations, semi-structured questionnaires, and interviews. The second phase (quantitative) of this research was conducted using questionnaires based on themes arising from the initial qualitative inquiry. The data collected are the ‘sources of evidence’ leading to credible results and conclusions. Scholars are of the opinion that data collection would make a case study research rigorous and increase its power of interpretation when it is adequately addressed (Creswell & Plano Clark, 2011; Saunders et al., 2012).

4.13 RESEARCH FIELDWORK PROCEDURE

Good fieldwork from the researcher must be able to elicit vital data and information through systematic notetaking and the strategic questioning of interview participants. Excellent data collection would also enable the researcher to increase the rigour and reliability of the case study research, while inaccurate data collection would impact the results of a study and ultimately lead to invalid results and conclusions (Parikh, 2002; Bachman & Schutt, 2008). Data collection approaches for qualitative research studies involved direct interaction with individuals taking part in the research on a one-to-one basis. Due to time and the consuming nature of qualitative inquiries, the research data was collected from a small sample size that reflected the general characteristics of the target population. However, in the case of quantitative research, larger samples were collected to facilitate a rigorous statistical analysis to establish a valid result. One of the benefits of the qualitative research approach is that it allowed for the collection of a variety of data types which in turn produced an in-depth insight into the phenomenon being researched. Academicians are of the opinion that surveys and questionnaires are standard ways of collecting qualitative data (Creswell & Plano Clark 2011; Saunders et al., 2012).

This research made use of multiple methods of data collection, adopting multiple data collection techniques to collect questionnaire items. Due to the adoption of an exploratory sequential design approach, data collection was in two phases - from qualitative data to quantitative data. The finding from the two phases were connected, analysed and interpreted accordingly.

Table 14: Sources of data collection.

Sources of Evidence	Strengths	Weaknesses
Documents	• Stable and can be retrieved repeatedly • Exact • Broad coverage	• Retrievability can be slow • Biased selectivity • Reporting bias • Access may be blocked

Archival records	• Same as documents • Precise and quantitative.	• Same as for documents • Accessibility due to privacy reasons
Interviews	• Targeted • Insightful	• Response bias • Inaccuracy • Reflexivity
Direct observations	• Reality • Contextual	• Time consuming • Selective • Reflexivity
Physical artefacts	• Insightful and cultural features and technical operations	• Selectivity • Availability

Source: Adapted from 'The case research strategy in studies of information systems. MIS quarterly, 11: 369-386', Benbasat et al., (1987).

4.14 DATA TRIANGULATION

Triangulation involves the use of multiple independent sources of data or data-collection methods within a single study to seek convergence, corroboration, and correspondence of results from different methods of enquiry and to help ensure the integrity of the data regarding its validity and trustworthiness (Creswell & Plano Clark, 2011; Saunders *et al*., 2012). According to Ashaye, "Triangulation arises as an ethical need to confirm the validity of the processes and to overcome the potential to bias" (2014, p.161). In case of study research, triangulation provides the standard for data collection. It allows data to be collected from a variety of sources using various methods to satisfy the data requirements of an enquiry on a phenomenon. Triangulation could be a combination of qualitative and quantitative research approaches such as seen in mixed-methods studies or single methods inquiries such as qualitative study or quantitative study.

4.15 UNIT OF ANALYSIS

The unit of analysis is closely linked to the purpose of the research. Yin (2009) explained that there could be more than a single unit of analysis, depending on the research design. This research focused on the Lagos State government MDAs and selected Federal government public-sector. Consequently, the unit of analysis is the individual government MDAs' websites.

4.16 QUESTIONNAIRE DEVELOPMENT

Questionnaires are developed and administered to research participants as a means of gathering data for a specific research work. According to Zikmund (2000) the use of questionnaires in research have advantages as well as disadvantages. A major advantage of using questionnaire is that it is convenient, simple and quick to complete by the research participants. Questionnaires are also cost-effective and can be distributed by the researcher himself. Questionnaires allows research participants ample time to reflect on the questions before answering them, thereby increasing the credibility of research responses. Smith et al., (2016) observed that apart from the convenience of using questionnaires, there are obvious disadvantages such as slow rate of recovering the questionnaires, the challenges of the respondents abilities to answer the questions correctly when the questions are complex and the author of the questionnaire is not available on the spot to explain the contents of the questionnaire. Questionnaires enable the researcher to cover wide and diverse range of questions using multiple response formats which could be in form of Likert scale, multiple choice, and close-ended questions (Saunders et al., 2012; Smith et al., 2016).

Creswell and Plano Clark (2011) observed that developing a good questionnaire instrument in mixed-methods research that has strong psychometric properties takes time and hard work. A mixed-methods researcher would normally use key themes from the initial qualitative enquiry to find published materials and instruments that best match the various qualitative themes that emerged from his own research work; or as an alternative develop a bespoke instrument. This type of questionnaire development approach agrees with Creswell and Plano Clark who stated that "mixed-methods researchers may decide to develop their own instrument based on the qualitative findings" (2011, p.189). A general approach to developing a good survey instrument was recommended by DeVellis (1991) and cited in Creswell and Plano Clark (2011) which includes: 1) Determine what

to measure, and get a thorough understanding of the theory and constructs to be addressed, 2) Generate a pool of items, an appropriate reading level, and use simple questions using language the participants can read and understand very well, 3)Determine the scale of measurement for the items in the survey questionnaire, 4) Allow subject knowledge experts to review the pooled items, 5) Administer the questionnaire to a small number of the population for validation, 6) Evaluate the items for item-scale correlations, item variance, and reliability, and 7) Optimize scale length based on item performance and reliability checks.

To develop the survey instrument for this research work, the researcher reviewed, and analysed information collected in the literature review chapter and the data and information gathered during the brainstorming sessions with E-government experts at the start of the research inquiry. The literature review stage and brainstorming sessions with subject knowledge experts resulted in the generation of E-government themes and a pool of items that were further refined by the researcher to align with the research objectives. The refined instrument was validated by a small group of research participants and subject knowledge experts.

4.16.1 Questionnaire items

The survey instrument is divided into two broad categories 1) Questionnaires targeted at E-government supply-side (government authorities) and 2) Questionnaires targeted at E-government demand-side (E-government users).

The questionnaire for E-government demand-side is divided into eleven sections (A-K). Section A comprised of GENERAL INFORMATION that are close-ended questions. The questions in section A included items such as the participants age, sex, educational level, and employment type. Section B focused on E-government AWARENESS and is made up of a mix of open-ended questions together with close-ended questions. Section C contains multiple choice questions on E-GOVERNMENT BENEFITS measured on a Likert scale ranging from ‘very important’ to ‘very unimportant’. Section C also consist of a single open-ended question which allowed the research participants opportunities to enumerate other benefits that were not included in the survey instrument. Section D included items on E-GOVERNMENT RISK and are made up of a combination of Likert scale items and an open-ended question. Section E contained questions on E-GOVERNMENT BARRIERS. It comprised of multiple-choice items measured on a Likert scale, and a single open-ended question. Section F focuses extensively on the

‘NETWORK PROCESS’ and is divided into five components vis-à-vis Shared vision, Network structure, Incentive design, Network partner selection, and Institutionalisation of Network goals. Each of the five Network component comprised of both Likert scale items and an open-ended question. Section G comprised of questions on INTRA-ORGANISATION FACTORS and is divided into four sub-themes i.e. Leadership, Goals/Objectives, Funding, and Attitude. Section G comprised both close-ended and open-ended questions. Section H focused on CHANGE MANAGEMENT. It consists of multiple-choice questions that require either a ‘yes’ or ‘No’ answer and an extensive multiple-choice Likert scale item. Section I is made up of E-GOVERNMENT ACTORS and comprises of multiple items which allowed the research participants to map ‘E-government Actors’ to E-government development issues. Section I also included an open-ended question that enabled the research participants to express other opinion they felt were important for E-government development in Nigeria. Section J focused on GOOD PRACTISE GUIDELINES. It contained multiple-choice Likert scale items and a single open-ended question. Section K contained the closing question made up of open-ended questions about the participants experiences of E-government development and use in Nigeria.

Part B of the research survey was administered to E-government users which comprised mainly of employees of the Lagos State government and a few private-sector workers. The demand-side questionnaire is made of 25 questions made up of both open-ended and close- ended questions. The questionnaire was developed with a larger population in mind and designed to capture data on individual experiences among the target population (Lagos State government employees) regarding the use of government websites in Nigeria.

4.17 THE RESEARCH PILOT STUDY

The pilot test or study is a small-scale study designed to test a questionnaire, interview checklist or observation schedule to minimise the likelihood of respondents having problems when answering the questions in the survey instrument (Saunders et al., 2012). The pilot study also allows the assessment of the research instrument’s validity and ensures that data recording methods are thoroughly checked so that data collected are reliable and of high quality. The pilot test provided the opportunity for the survey instruments to be perfected before use. In this research work, a pilot test of the questionnaire was conducted using a small number of the target population to review and

answer the research questions in an online survey using eSurv (www.esurv.org). Further refinements to the questionnaires were suggested by the Director of the Lagos State Ministry of Science and Technology and a senior official at NITDA.

Following the pilot study, the questionnaires were refined before they were distributed to the research participants in MDAs at the Lagos State Government Secretariat Alausa-Ikeja. The completed questionnaires were returned within two weeks and collated for processing.

The Interview question format

The interview questions were designed to elicit information from the interviewees on their awareness, understanding, and experiences of E-government use and development in Lagos State and by extension in Nigeria in line with the objectives of this research work.

The interview questionnaire is a two-fold item, 1) E-government supply-side questionnaire, and 2) E-government demand-side (Users) questionnaire.

The (E-government supply-side) questionnaire is divided into eleven sections with letters (A-K). Each section is made up of open-ended questions, questions that required mapping of 'actors' to 'events', and questions designed to be measured on a Likert scale ranging from 'Very insignificant' to 'Very significant', 'Very unimportant to 'Very important', and 'Disagree to Agree'.

The second questionnaire (Demand-side) was developed from the outcome of the first phase (Qualitative strand) of the research and is made up twenty-five short questions in a variety of formats. The responses from participant in the second phase (Quantitative inquiry) is expected to confirm the results from the initial first phase which is the qualitative aspect of the research work.

Copies of the questionnaires used in this research inquiry is attached as appendix A.

Implementation of the survey strategy and questionnaire response rate

To implement the survey strategy, two sets of questionnaires were prepared and distributed to the research participants. The first set of questionnaires (E-government supply-side) was targeted at senior information officers and Departmental heads within the selected Ministries. The second set of questionnaires (demand-side) was targeted at employees working at the selected Ministries, Departments, and Agencies. The second

set of questionnaires formed the bulk of the questionnaires distributed and captured the options of E-government users within the selected MDAs.

Survey implementation challenges

The survey was conducted close to the time the federal and state government elections were due to take place in Nigeria. The election preparation adversely affected the researcher's ability to gain access to senior government officials and heads of Departments who had earlier agreed to take part in the survey because many of them were busy preparing for the upcoming elections. The researcher had to use the influence of his older brother who was a director in one of the Ministries to facilitate access to the senior government officials at various Ministries who had earlier agreed to voluntarily take part in the research. The researcher had to spend twice the number of financial resources and days scheduled to distribute and collect the questionnaires back due to having to chase after research participants who defaulted on pre-scheduled appointments on several occasions.

Questionnaires response rate

The researcher handed out twenty-two (22) questionnaires (E-government supply-side) to senior managers and senior information officers at eighteen (18) Ministries and four (4) Parastatals of the Lagos State Government location in Lagos State. The researcher was able to retrieve twelve (12) correctly completed questionnaires which represented 54.4% of the questionnaires distributed for the E-government (supply-side) questionnaire. A hundred and fifty (150) questionnaires (demand-side) were handed out to various employees from different MDAs of the Lagos State Government located at the Alausa Secretariat in Ikeja. The researcher was able to retrieve one hundred and eight (108) correctly completed questionnaires which represented seventy-two percent (72%) of the questionnaires distributed for the E-government demand-side. The researcher is satisfied with the response rate of 72% which is generally regarded as a very good response rate for social science research studies (Gale, 2015).

4.18 THE RESEARCH VISIT AND INTERVIEWS

McNamara (1999) pointed out that interviews are useful mainly for obtaining the story behind a participant's experiences and they enable the interviewer to pursue in-depth information around a topic. As part of this research work, the researcher conducted a field trip to Nigeria on three different occasions to visit selected organisations that agreed to participate willingly in this research work. Although the researcher would have loved to visit many more organisations within the country; but due to limited time and financial resources, and difficulty in securing access permissions from some of the government organisations, the researcher had to focus on the organisations that were available and ready to participate in the research. The research visit concentrated on public-sector organisations. The researcher chose to commence the research visit from the National Information Technology Development Agency (NITDA) situated in Abuja, the capital city of Nigeria. NITDA is the clearinghouse for all I.T projects and infrastructure development in Nigeria. It is the principal Agency mandated by the government for E-government development and implementation, Internet governance and general I.T development in Nigeria.

Due to time and cost constraints, the researcher limited his visits to 12 key public institutions located in the Federal Capital Territory (Abuja) and the Lagos State Government Secretariat at Alausa Ikeja. During the visits, face-to-face interviews were conducted with the research participants. The Lagos State Government MDAs visited were the Ministry of Science and Technology, Ministry of Health, Ministry of Education, and Ministry of Finance, Ministry of Information and Strategy, Ministry of Transportation, and Ministry of Home Affairs.

The director of the Lagos State Ministry of Science and Technology granted an interview session and permitted the researcher to conduct further interviews with two other senior staffs at the Ministry of science and technology. A deputy director at the Ministry of Home Affairs granted an interview; likewise, a senior Medical Officer at the Ministry of Health granted an interview. Others that granted interview included senior staffs of the Ministries of Education, Information and Strategy, and Transport. The researcher adopted a standardised open-ended interview approach which allowed the interviewees to freely answer the research questions to the best of their knowledge. This method made the interview rich in detail and provided extensive information on E-government practise in Nigeria. According to (Mason, 2002; Somekh & Lewin, 2005) face-to-face interview

have some advantages, it is believed to motivate the respondent and encourages them to freely participate in the research effort without any form of bias. It has a high response rate because it is conducted face-to-face in real time. Face-to-face interview provide opportunities to elicit valuable data on the spot. It also assists the researcher to observe and control the extent of the data and information provided by the interviewee.

A semi-structured, open-ended interviews approach was used in this research work because of the flexibility it offers. Ritchie and Lewis (2003) suggested that semi-structured interviews allows for interactions and capacity to allow the researcher to use a range of techniques to extract answers from the interviewees, the ability to combine structure with flexibility, and ability to allow the researcher to generate new knowledge from the interviews.

4.19 SELECTION OF ORGANISATIONS FOR THE RESEARCH

In selecting the organisations to participate in this research, careful consideration was given to the research approach and strategy adopted for use to conduct this research work. Having earlier chosen a pragmatist research strategy, the researcher felt it necessary to provide the reasons to justify the selection of the specific organisations used for this research.

The criteria for selecting the organisations used in this study was determined by careful considerations of the recommendations in the literature, expert advice and opinions, and direct observations by the researcher. The criteria used for selection of the organisations that took part in the research are discussed below.

Ease of access

Considering the sensitive nature of this research work, gaining access to government organisations is an essential factor that was taken into consideration. Without the approval of the authorities in charge at the various organisations of interest, it would be impossible to extract the sort of information required to conduct this enquiry. Many public-sector organisations in Nigeria will not readily part with information without intervention from senior managers or directors within the establishments. The professional relationship and contacts of the author with high-level individuals at the Lagos state government Ministries and the intervention of my older brother who was a Director in the Ministry of

Home Affairs at the time of conducting the research played a significant role in facilitating access to the required personnel and information needed for the research work.

History of ICT experience

The MDAs selected for the research purpose had varying degrees of exposure to ICT. These exposures range from ICT policy development to provision of public e-services. The inclusion of a mixed variety of data and information is as a result of using the mixed methods research approach which recommends the use of multiple forms of data gathering. The decision to use multiple organisations from diverse public-sector institutions not only provided a form of data triangulation but also enriched the research and its outcome. Additionally, the Ministries selected were able to provide valuable data and information regarding E-government policies, strategies, drivers and barriers as experienced in their various efforts toward the development, adoption, and use of E-government initiatives in Lagos State Government establishments.

The interview conducted at NITDA was very helpful as it set the basis for the themes to explore a priori to the visits to the Lagos State government secretariat.

4.20 NATIONAL INFORMATION TECHNOLOGY DEVELOPMENT AGENCY (NITDA)

The National Information Technology Development Agency NITDA is the principal Agency for E-government development and implementation, Internet governance, and general IT development in Nigeria. The NITDA Act of 2007 was established to create a framework for the planning, research, development, standardisation, application, coordination, monitoring, evaluation and regulation of Information Technology practices, activities and systems in Nigeria.

Figure 26: NITDA Internet homepage.

Source: Adapted from NITDA's home page. https://nitda.gov.ng/

According to the information on NITDA's website (nitda.gov.ng) it's core functions are to ensure coordination and implementation of the national E-government Master Plan, to develop and drive strategies that will encourage and improve the adoption of the use of Information Technology in government service delivery, to coordinate the government's adoption of IT tools in service delivery, to develop and monitor the uptake of minimum standards and guidelines for E-government in Nigeria, to develop E-government capacity among MDAs, to collaborate with MDAs in developing tailor-made plans and strategies for E-government in Nigeria, to license vendors that intend to collaborate with MDAs in the delivery of E-government services, and to monitor and ensure the implementation of standards for government websites and handle matters relating to the gov.ng domain.

4.21 LAGOS STATE PUBLIC-SECTOR ORGANISATIONS

Nigeria is the largest country in Africa in terms of population and economy. Nigeria is a democratic country and it operates a federal system of government made up of federal, states, and local governments. There are 36 different states in Nigeria, comprising of a total of 774 local government council areas. The federal government is at the centre of governance and it is responsible for the overall direction in which the country moves.

Nigeria is still an emerging economy with an estimated population of 200 million (World Bank, 2018). In 2019 Lagos State was reported to have an estimated population of 14 million people in its urban settlement areas (www.populationstat.com/nigeria/lagos).

This study is about E-government development in Nigeria, using Lagos State Government Ministries as case study. Although Lagos state is the former capital of Nigeria, it is still reputed to be the de facto capital of the country owing to its vast population size. Lagos state is also the commercial nerve-centre of the country; playing host to numerous commercial and banking activities. The Lagos State government secretariat located at Alausa-Ikeja, houses various government Ministries, Departments and Agencies.

Lagos state government over the last decade claimed to have pioneered the use of ICT to deliver public-sector services and asserted that it is well-known for its public e-service operations (Emmanuel, 2007; Chee et al., 2012). The choice of using some Ministries in Lagos state for this research work is because of the diversity of the population in terms of ethnic the configuration and the large size of the population of Lagos state. Another consideration relevant to this study is the Lagos State government's well-established e-services programmes in its various MDAs. Lagos State government is reputed to be in the forefront of using ICT-based systems for public service delivery (Choudrie *et al.*, 2017).

4.22 GOVERNMENT OF LAGOS STATE

Since its creation in 1967, Lagos State has been administered either by a governor and a House of Assembly in civilian and by Sole-Administrators or Military Administrators during military administrations. The Lagos State Government Secretariat is located at Alausa-Ikeja. The Secretariat houses the office (Round House) of the governor of Lagos State and over 21 other government Ministries and parastatals. Since December 2007,

Yoruba has been adopted as the second official language of debate and discussion in the House of Assembly after the English language.

4.23 LAGOS STATE GOVERNMENT SECRETARIAT (ALAUSA-IKEJA)

The Lagos State Government has its Secretariat located at Alausa-Ikeja. It is the seat of power of the Lagos State Government. The secretariat houses the office of the Lagos state governor, and many other Ministries Departments and Agencies of the government of Lagos State.

4.24 A BRIEF OVERVIEW OF THE MINISTRIES IN LAGOS STATE GOVERNMENT USED IN THIS RESEARCH

E-government services can serve multiple purposes. Researchers have argued that E-government can be used by the government to dispense its public duties and responsibilities, as well as to provide automation services effectively and efficiently (Rorissa and Demissie, 2010). The core of E-government as a governance paradigm resides in its ability to engage the public through well-developed public facing government websites. Well-developed government websites should primarily be based on the number and quality of executable online services that are available to the public. Researchers have been using content analysis techniques to examine contents of websites to examine and evaluate themes such as diversity, commercialisation, and utilisation of technology on the World Wide Web (McMillan, 2000).

The evaluation methods and the selection of evaluation criteria for websites are different and require further theoretical justifications. Many of the previous approaches to E-government website evaluation had focused either on essential management contents or a specific set of website outcomes. They either use subjective factors, such as ease of access, text clearness, and presentation quality as performance indices. West (2007) proposed an E-government index measuring the output or supply-side of government's online web presence which refers to the extent to which individual national websites provided online features and executable services. West's E-government measurement and evaluation criteria is regarded as a robust measurement framework because it accounted for the presence of a large amount of online website features that are essential to the delivery of E-government services (Rorissa, Demissie and Pardo, 2011). Many

researchers use the methods proposed by West when computing E-government index. West's method is highly used by researchers due to the objective set of procedures it used in its computation and analysis of websites. West's E-government measurement framework is centred on including website features and contents that are relevant to government e-services (West, 2007). Government websites must be evaluated for the presence of specific features that deals with information availability, service delivery, and public access if it is to function effective and deliver the sorts of services that will benefit the public. Features assessed by West's E-government evaluation framework included the name of the country, region of the world, online publications, online database, audio clips, video clips, non-native languages or foreign language translation, commercial advertising, premium fees, facility to make payments, disability access, privacy policy, security features, presence of online services, number of different services, digital signatures, email facility, comment form, automatic email update facility, website personalization, personal digital assistant (PDA) access, and an option to customise the website for an English version (West, 2007).

A visual inspection of many government websites in Nigeria indicated that various elements of the West's framework for evaluating government's E-government websites were present to a significant extent on the Federal government websites while many of the State Government websites did not have many of the essential features for a robust public facing official websites. Government websites in Nigeria are yet to reach a fully matured level when compared to those available in western countries. The websites of many MDAs in Lagos state could at best be described as evolving due to the lack of many of the essential features that must be present on government websites if is to serve as a tool for delivery public services and engaging citizens in a meaningful way.

4.25 WEBSITE FEATURES OF THE SELECTED MINISTRIES IN LAGOS STATE

Due to time and resource limitation, the researcher has selected some key Lagos State Ministries for this research work. The Ministries selected for website feature analysis are:

1 Lagos State Ministry of Science and Technology
2 Lagos State Ministry of Information and Strategy
3 Lagos State Ministry of Health
4 Lagos State Ministry of Works and Infrastructure

5 Lagos State Ministry of Home Affairs
6 Lagos State Ministry of Education
7 Lagos State Ministry of Tourism, Arts and Culture
8 Lagos State Ministry of Transportation
9 Lagos State Ministry of Finance
10 Lagos State Ministry of Agriculture

4.25.1 LAGOS STATE MINISTRY OF SCIENCE AND TECHNOLOGY

The Lagos State Ministry of Science and Technology was created in February 2004 by the administration of Asiwaju Bola Ahmed Tinubu from what was previously known as the Office of Special Adviser on Information Technology and Special Services.

The Ahmed Tinubu administration identified the utilisation of technology as an effective means to manage the challenges of improving government service delivery and to ensure economic and social development in Lagos State. The government of Lagos State has claimed to be in the forefront of developing and deploying ICT-based public services in Nigeria (Choudrie *et al.*, 2017). Some of the notable e-service initiatives of the Lagos State government are e-payments portal, e-planning permit (ePP), and the Electronic Tax Clearance Certificate (e-TCC). According to information on its website, the Lagos state Ministry of science and technology has claimed to provide professional Information Communication Technology services to the Civil Service and the public (Lagosstate.gov.ng)

According to the Lagos State government's Ministry of Science and Technology, the vision of the Ministry is "to make Lagos a model State through the innovative application of Science and Technology for solving problems and making an impact in all human endeavours" - Lagosstate.gov.ng

The mission statement of the Ministry of Science and Technology is "to employ science and technology in all activities towards improving the quality of life of Lagosians and transforming Lagos State through strategic and coordinated utilisation of available resources into a developed, industrial and modern State of international stature"- Lagosstate.gov.ng

4.25.2 LAGOS STATE MINISTRY OF WORKS AND INFRASTRUCTURE

The history of the Lagos State Ministry of Works and Infrastructure dated back to 1967 when Lagos State was created. The Ministry was considered as an engine room of growth and development of Lagos State due to its strategic importance.

According to information available on its website the Ministry claimed that given the dynamic nature of its duties and responsibilities, the Ministry's nomenclature was re-engineered by the Asiwaju Bola Ahmed Tinubu administration when it was renamed Ministry of Works and Infrastructure on 30th April 2003. The ministry consists of two offices: The Office of Works and the Office of Infrastructure.

According to statements credited to the Ministry's website, the coming on board of the Akinwunmi Ambode's administration in 2015, the Ministry was taken back to its former status as Ministry of Works and Infrastructure (Lagosstate.gov.ng). According to its website, the vision of the Ministry is "To be Excellent in Sustainable Infrastructure Development and Service Delivery" (Lagosstate.gov.ng). The mission statement of the Ministry as stated on its website is "To provide world-class infrastructure and services through the employment of motivated personnel and leading-edge technology for the benefit of the citizens and investors" - Lagosstate.gov.ng

Some of the parastatals under the supervision and monitoring of the Ministry of Works and Infrastructure are:

· Public Works Corporation (PWC)

· Materials Testing Laboratory,

· Lagos State Infrastructure Asset Management Agency

· Lagos State Infrastructure Maintenance and Regulatory Agency (LASIMRA)

4.25.3 LAGOS STATE MINISTRY OF HOME AFFAIRS

Lagos State Ministry of Home Affairs has undergone various stages of development and restructuring both in nomenclature and responsibility since inception in 1979.

The Ministry of Home Affairs was first created during the administration of the former Governor of Lagos State (Alhaji Lateef Jakande) and it was known as the Office of Home Affairs, Lottery and Pools Betting. However, during the administrative tenure of Navy Capt. Mike Akhigbe, the Office was changed to a full-fledged Ministry and renamed the Ministry of Home Affairs and Tourism with Mr Franklin Adejuwon as the First Honourable Commissioner.

The name of the Ministry was later changed to the Office of Home Affairs during the tenure of Col. Alagbe Raji Rasaki. In 1999, the Office of Home Affairs regained its Ministerial status as Governor Asiwaju Bola Ahmed Tinubu's administration renamed it the Ministry of Home Affairs and Culture under the Honourable Commissioner Musiliu Obanikoro.

In 2015, the Ministry was renamed by Governor Akinwunmi Ambode as the Ministry of Home Affairs.

According to the Lagos state Ministry of home affairs, its mission statement is the "execution of Holy Pilgrimages and nipping religious crises in the bud through effective service delivery, mediation and public enlightenment" (Lagosstate.gov.ng). The Ministry of Home Affairs stated on its official website that its vision is "To be an outstanding ministry with a focus on maintaining the harmonious relationship among diverse religious groups for peaceful co-existence in the State" (Lagosstate.gov.ng).

4.25.4 LAGOS STATE MINISTRY OF INFORMATION AND STRATEGY

According to information on the website of the Lagos state Ministry of information and strategy, when Lagos State was created the Office of the Secretary to the Government had the responsibilities of managing cabinet matters, security, establishments, home affairs, and information (Lagosstate.gov.ng). As the business of governance grew and became more complex, the responsibility of information service was transferred to the Military Governor's office. The Ministry of information and strategy evolved from the Office of the Secretary to the Military Government. It gradually transformed from being the Office of the Secretary to the Military Government into becoming the Ministry of

Information and Tourism. Subsequently, the Ministry of Information was established in April 1971 as a distinct organ from the office of the Military Governor to perform the task of government's communication with the people and the press. The statutory responsibilities of the Ministry of Information and Strategy as highlighted on the Ministry's website are; Publicity and Mass Media, Public Relation of Government, Registration of newspapers and magazines, Archives matters, Publishing and Advertising, and the management of Information on the website of the Lagos State Government.

The Ministry of Information and Strategy has four Departments which included: Public enlightenment, Information production, Press and Public Relations, Finance and Administration.

In November 2015, under the administration of Governor Akinwunmi Ambode, there was a restructuring and reorganisation of the Ministry. As part of the reorganisation process, some names of the existing Departments and the nomenclature of Officers in the Ministries were changed. All the officers in the Ministry who were formally called "Information Officers" was changed to "Public Affairs Officers".

4.25.5 LAGOS STATE MINISTRY OF TOURISM, ARTS AND CULTURE

According to the website of the Lagos State Ministry of Tourism, Arts and Culture, tourism in Lagos State was first fashioned in 1995 by the Military Administration of Captain Mike Akhigbe as a Department under the Ministry of Home Affairs (Lagosstate.gov.ng). The website of the Lagos State Ministry of Tourism, Arts and Culture narrated the short journey of the Ministry of Tourism, Arts and Culture. In 1991 the Government of Chief Michael Otedola, removed the Tourism Department from the Ministry of Home Affairs and merged it with the Ministry of Information and Culture, thus becoming the Bureau of Information, Culture & Tourism and was headed by a Permanent Secretary.

In 1994, the Tourism Department was again detached from Bureau of Information, Culture and Tourism and was merged with the Ministry of Commerce, Industry and Tourism (MCIT) and was headed by a Commissioner.

The website of Lagos State Ministry of Tourism, Arts and Culture explained that the Lagos State Tourism Board was created out of the Tourism Department. The functions

of the Board were tourism promotion and marketing while the Tourism Department oversaw policy matters. Information available on the Ministry's website stated that "in 1998, the Tourism Department and the Lagos State Tourism Board became a full Corporation with the name Lagos State Waterfront and Tourism Development Corporation (LSWTDC) under a Managing Director" (lagosstate.gov.ng)

The Ministry's website concluded that "in 2007 the LSWTDC was divided into 2 different Ministries: Ministry of Tourism and Intergovernmental Relations and Ministry of Waterfront Infrastructure Development" (lagosstate.gov.ng)

It is on record that the Administration of Mr Akinwunmi Ambode in 2015 renamed the Ministry and expanded its Ministerial responsibilities to include Ministry of Tourism Arts and Culture.

According to the Ministry's website, the vision statement of the Lagos State Ministry of Tourism Arts, and Culture is to "make Lagos State the preferred destination for Tourism, Leisure and Business in Africa" (Lagosstate.gov.ng). The Ministry stated that its mission statement is "to attain Sustainable Tourism Development through an enabling environment that is acceptable to both domestic and international tourists" (lagosstate.gov.ng)

4.25.6 LAGOS STATE MINISTRY OF EDUCATION

The Ministry of Education of Lagos State according to its website asserted that its goals are set to positively influence and reshape the present educational system within the State to one that improves capacity and performance outcomes through optimisation of resources available to it. The ministry explained that the objectives of the ministry are "to provide enriched educational experience for students in schools through the provision of quality standards, pedagogy excellence, appropriate teaching methods or approaches, learning resources and instructional materials" (http://education.lagosstate.gov.ng).

Primary education

According to the Lagos State Ministry of Education website, The State Universal Basic Education Board (SUBEB) oversees primary education up to the Junior Secondary

School level with a total of 1001 primary schools and 339 Junior Secondary Schools. SUBEB is also charged with:

- Formulation of policy guidelines for implementation of UBE programmes.
- Prescribing minimum standards for the UBE programmes.
- Collating and preparing periodic master plans for UBE programmes.
- Identifying areas of possible intervention in the provision of adequate basic educational facilities.
- active collaboration with state government, ETF and UBEC.
- handling construction, rehabilitation and renovation of primary and junior secondary schools.

Senior secondary education

The Ministry of Education explained that the Basic Education Services Department serves as the clearinghouse for all matters affecting the day to day running of the senior secondary schools and coordinating external examinations such as WAEC and BECE

Private education

The Private Education and Special Programmes Department (PESPD) was reported to handle all matters affecting private schools in the Lagos State. According to information on the Ministry's website, PESPD has oversight function of conducting the registration of private schools, pre- and post-approval inspections, and monitoring.

Technical education

The Lagos State Vocational and Technical Education Board are saddled with the responsibility of ensuring the smooth running of 5 Technical colleges in Lagos State.

Lagos State Education Management Systems (LASGEMS)

The Ministry of Education website also asserted that the management of information on students has brought management of school data to the public domain. It further explains that the system has data of all students in both public and private schools and can be accessed online by the public.

As part of this research work an interview was conducted with the coordinator of the Onigbongbo Educational Foundation (Ikeja) to ascertain the role that ICT was playing

towards the advancement of education in Lagos State and whether E-government is having any positive impact on education in Lagos State. Some of her responses were instrumental in shaping the survey instrument used in this research work.

As stated on the Lagos state Ministry of education website, the vision of the Ministry is "to become the model of excellence in the provision of education in Africa" (http://education.lagosstate.gov.ng). And according to the Ministry's website, the mission statement of the Ministry is "to provide high-quality education accessible to all learners through the effective and efficient management of resources for the attainment of self-reliance and socio-economic development" (http://education.lagosstate.gov.ng).

4.25.7 LAGOS STATE MINISTRY OF HEALTH

According to the information on the website of the Ministry of Health, the Ministry came into operation when Lagos State was created in 1967. The website further stated that the Ministry of Health was formally charged with the responsibility of both health and social welfare (http://health.lagosstate.gov.ng).

Organisational Structure

Information gathered from the Ministry's website highlighted that the executive headship of the Ministry is reposed in the Honourable Commissioner for Health and the Special Adviser to the Governor on Primary Healthcare. Through them, policy matters affecting health in the State are channelled to the State Executive Council and the Governor.

The Permanent Secretary is the accounting officer and head of the Ministry through whom all the directors report to the Honourable Commissioner and the Special Adviser to the Governor on Primary Healthcare.

The website listed nine Directorates under the Ministry Health which are:

- Health Care Planning, Research & Statistics
- Primary Health Care: Disease Control & Family Health/Nutrition
- Hospital Services: HEFAMAA & LASAMBUS
- Occupational Health & Staff Clinic
- Pharmaceutical Services
- Medical Administration & Training
- Nursing
- Accounts
- Finance and Administration

- Public Affairs Unit

As stated on its website, the Lagos State Ministry of Health's vision is "to attain excellence in health service delivery by applying best practices at all levels of care" (http://health.lagosstate.gov.ng). And its mission statement is "to deliver qualitative, affordable and equitable healthcare service to the citizenry applying appropriate technology by highly motivated staff'' (http://health.lagosstate.gov.ng).

4.25.8 LAGOS STATE MINISTRY OF FINANCE

The Ministry of Finance claimed on its official website to be a "unique Agency that provides the financial backbone that helps government translate its vision of providing the dividends of democracy to the teeming population of Lagos State" (http://finance.lagosstate.gov.ng). According to the information obtained from the Ministry's website, the Ministry was designated the Ministry of Finance and Economic Development at inception in April 1968 with Alhaji Chief I. A. S. Adewale as its pioneer Commissioner. As part of its restructuring efforts, the Economic Development Department was separated from Ministry of Finance and merged with Budget in 1995 to become the Ministry of Economic Planning and Budget while Ministry of Finance stood on its own (http://finance.lagosstate.gov.ng).

The Finance Ministry was initially structured into six Directorates consisting of the three common services: Personnel Management, Planning, Research and Statistics, Finance and Supplies and three other professional Directorates: Public Finance, Computer Services and Central Internal Audit.

At inception, the Ministry operated through three Agencies: Finance Headquarters, the State Treasury Office, and the Board of Internal Revenue. However, the Board of Internal Revenue, which is responsible for collecting tax related Internally Generated Revenue (IGR) for the State Government was upgraded and became semi-autonomous in the Year 2006 to enhance revenue generation, transparency and accountability. The Public Finance and Debt Management Office (PF/DMO), hitherto a Department in the Ministry was equally elevated to an Agency status in 2005 with a Permanent Secretary as the head. In 2015, due to realignment by the present government, the PF/DMO was merged with Office of Finance to become a Department in the Office.

The Office of Finance is one of the arms of the Ministry of Finance and is headed by a Permanent Secretary. The Headquarters served as the coordinating arm of the Ministry (http://finance.lagosstate.gov.ng).

The vision statement of the Ministry according to information on its homepage is "to Transform Lagos State Office of Finance into the Model Manager for Public Finance in Africa." While the Ministry's mission statement is a "committed to effective financial risk management and leveraging on private-sector participation towards achieving the needs and aspirations of the government and people of Lagos State" (http://finance.lagosstate.gov.ng).

4.26 ANALYSIS OF THE WEBSITES OF LAGOS STATE GOVERNMENT MINISTRIES (August 2017)

Visual inspections of the various websites of the Lagos State Government Ministries that was conducted during the month of August 2017 revealed mixed results ranging from Ministry websites with 'emerging presence' to those that could be classified as 'Transactional presence'. Notable E-government features found on the websites inspected included e-payments facilities, job application forms, downloadable forms, and some interactive features. Although some of the website appeared to be well-designed, many suffers from lack of regular updates to their online contents. Another setback to the websites of some of the Ministries was the lack of interactive databases on essential government services which visitors to the websites could access for relevant information. Such databases could include statistical reports on government financial allocations and spending, to data on education performances in various government schools and institutions.

On inspection, many of the Lagos State government Ministry websites showed limited two-way interaction facilities such as online chat rooms and online feedback mechanism that could be used for communication purposes. A translation service is also absent from many of the Ministries websites that were analysed thereby making it less useful for a foreign language speaker. The help menu is another facility that was missing from the websites of many of the Ministries websites which made them unattractive to new users or visitors to the websites.

While the efforts of the Lagos State government Ministries are commendable on their ability to maintain a web presence, the overall objective is to move towards a 'Connected Presence' which represents a level four maturity in E-government. It is at level four

maturity that the State government would experience fully integrated infrastructure with centralised databases that will ultimately enable cross-agency collaboration with other governmental Ministries, Departments, and Agencies which would, in turn, provide a one-stop-shop integrated service to the citizens.

The level four maturity stage also enables a seamless flow of public services and information across multiple tiers of government, thereby improving the performance and quality of service delivered to the citizens. Although the Lagos State government's websites currently showcase some web 2.0 features such as RSS feeds and some social media plug-ins such as Facebook, Google, Twitter, and Wikis, user experiences cannot be complete without a fully connected and integrated system. This perhaps explains the reason behind broken web links users often experience on some of the web portals of the Ministries of the Lagos State government.

Content analysis of the individual Websites of Lagos State Ministries revealed an entirely different picture from what was observed on the Lagos State Government Official Website. While the latter demonstrated a reasonable degree of advanced online website features, the individual Ministries were found to be lacking in many of the essential features required for public-sector websites that intend to offer E-government services.

The Lagos State government websites on inspection revealed that significant number of Ministries of the Lagos State government lacked many of the variables a website needs to be classified as either transactional or connected. Many of the Lagos State government Ministries and Agencies visited by the researcher existed at the cataloguing or emerging stages of E-government development. Many of them had very few of the important website features that must be present and functioning similar to the eighteen website features recommended by West (2007) needed for a well-developed E-government website. Therefore, the websites of Lagos State government Ministries and Agencies must be redesigned and redeveloped to meet the requirements and standards of a functional public website that can be of benefit to the public.

The results of the content analysis of Lagos State Government Ministry websites selected for use in this study is presented below.

Table 15: Key website features of Lagos State Ministries used in the research

Lagos State Government and Ministries websites	Help menu	Language translation	Link to external MDAs	Database available	Current information	Downloadable forms	RSS feeds	Social media plug-in	Web presence
Lagos State Government website			*	*	*		*	*	Enhanced
Ministry of Science and technology			*		*		*	*	Emerging
Ministry of Finance			*		*		*	*	Emerging
Ministry of Transportation					*		*	*	Emerging
Ministry of Home Affairs					*		*	*	Emerging
Ministry of Health					*		*	*	Emerging
Ministry of Tourism, Art and Culture					*		*	*	Emerging
Ministry of Information and Strategy					*		*	*	Emerging
Ministry of Works and Infrastructure					*		*	*	Emerging
Ministry of Education					*			*	Emerging

* Indicates availability of website feature

4.27 DATA ANALYSIS AND INTERPRETATION

An important consideration that a researcher should have in mind right form the onset of his project is the analysis procedure. A researcher must realise that as a result of the large quantities of data gathered during the course of his research, care must be taken to sort and manage his data into what is useful, and what is to be discarded (Burton, 2000). Prior to analysing the data collected using the survey instrument, the researcher undertook steps to clean and organise his dataset into different categories to ensure the right type of analysis are carried out.

4.27.1 Questionnaire Coding

Questionnaire items are simplified using codes to allow otherwise lengthy words to be shortened before analysing the data. Copies of the questionnaire items are included in the appendix section of this research work.

4.27.2 Addressing Outliers

To address the issues of outliers that could adversely affect the outcome of the research findings, the researcher took extra care to cleanse dataset of incorrect data inputs and coding errors that unintentionally occurred when data were being entered into the computer software packages before processing them. The data checks conducted during this research were through visual inspections of the datasets for correctness and validity. Erroneous data were removed or corrected.

4.27.3 Qualitative data analysis

In qualitative data research, analysis of data collected is conducted using conceptualisations based on the meanings expressed through words (Saunders *et al*., 2012). The researcher must be especially careful when analysing qualitative data because research participants make expressions based on human cognition and how they perceive the world around them (social constructionism). As a result, qualitative data are likely to comprise of ambiguity in opinions from different research participants. Qualitative data would often generate huge amount of data that are full of different meanings (Burton, 2000; Saunders *et al*.,2012) that need to be explored any analysed by the researcher to extract useful information about the phenomenon that is being studied. Saunders et al.,

(2012) observed that data collection in qualitative studies are non-standardized and would require the classifications into themes by the researcher.

The qualitative data used in this research were obtained from multiple sources which included documents in the public domain and primary data obtained from analysis of the research interviews conducted during this research work. Documents were reviewed and coded with the aid of NVIVO 10 – a computer-assisted qualitative data analysis software (CAQDAS). The research interviews were also transcribed using Nvivo10 tools to extract useful information from the research recordings that were classified into categories according to the main themes that emerged during the interviews. To identify prominent themes within the interviews conducted, the researcher had to undergo an iterative process of listening to recorded interviews of the different research participants on several occasions to get the meanings and specific viewpoints of the research participants and their perceptions on the phenomenon under investigation. Words that were frequently used and emphasised were taken note of together with the context in which they were used. Prominent words from various interviews were identified and linked together to arrive at key themes that were used to develop the survey instrument at subsequent phases of the research. Analysing qualitative data requires skills and dedication as researchers are faced with a daunting task of not only trying to understand the socially constructed meanings behind words expressed by the research participant during the research interviews, but also need to identify and extract valuable information required to satisfy the research enquiry in a rigorous and careful manner (Burton, 2000; Saunders *et al.*, 2012; Bazeley & Jackson 2013; Roberts *et al.*, 2015). To achieve the research objectives of this study and to answer the research questions, the researcher began with an inductive approach to explore the initial data collected in search for themes related to E-government development in Nigeria. Yin (2009) suggested that the researcher could begin with an exploratory approach to data collection with a view to developing a conceptual framework to guide the researcher's subsequent work.

4.27.4 Quantitative data analysis

Quantitative data refers to numerical data that could be quantified in some ways that would enable the researcher to meet his research objectives and answer his research questions. According to Saunders et al., "Quantitative data refer to all such primary and secondary data and can be a product of all research strategies (2012, p.472). Quantitative data are collected based on meanings derived from numbers and are collected using

standardised survey instruments. Quantitative data analysis is conducted with the aid of specially designed statistical packages, diagrams and charts (Burton, 2000; Saunders *et al.,* 2012; Bazeley & Jackson 2013). It is important to recognise the different types of data and their implications for analyses (Saunders et al., 2012). Statistical results obtained from data analysis, diagrams, and charts should be interpreted correctly for quantitative data to make sense to anyone interested in them.

This research work made use of quantitative data obtained from the survey instrument that were designed from themes initially developed from the qualitative phase of the research enquiry. This research work makes use of both nominal and ordinal data in developing the questionnaires for the research inquiry. Saunders et al., (2012) explained that nominal data or descriptive data could not be easily defined numerically or ranked, rather the data simply counts the number of occurrences of variables in each category. Contrary to nominal data, ordinal data are more precise forms of data and could be rank ordered.

To satisfy the research objectives and answer the research questions for this study, the researcher made use of a combination of qualitative and quantitative data; the qualitative data emerged as themes developed from key information obtained from research participants that were interviewed. The qualitative themes that emerged from the interviews were carefully refined in line with the objectives of the study and served as inputs for the quantitative strand of the research enquiry. Results obtained from the quantitative phase were analysed and interpreted and used in answering the research questions for the study.

4.27.5 Justification for using connected (Mixed methods) data analysis technique

This research work adopted the exploratory sequential design approach, consequently the imperative is for the data analysis procedure to use data analysis technique that is in tandem with the rules guiding sequential exploratory studies and addresses both qualitative and quantitative phases of the research design. The data analysis strategy adopted in this research work is the mixed-method approach. Literature suggested that pragmatism is a philosophical stance mostly associated with mixed-method studies (Creswell and Plano Clark, 2011). The pragmatist philosophy allows finding a compromise between interpretivist and positivist philosophies (Denscombe, 2008) and placing emphasis on the importance of the research question(s). Teddlie and Tashakkori observed that “Pragmatists consider the research questions to be more important than

either the method they use or the worldview that is supposed to underlie the method" (1998, p.21). In this research work, the researcher has focused on the objectives of the research and the importance of the research questions as having significant consequences for the research outcomes. The researcher is driven by the desire to understand and explain a social phenomenon (E-government development in Nigeria) with an overarching aim of investigating factors that impedes and promotes E-government in Nigeria. Since the researcher's intention is to 'understand' and 'interpret' the constructions and meanings individuals hold about various facets of E-government phenomenon in Nigeria, it follows that multiple methods of data collection and analysis techniques would be required to inform the problem under study and to satisfactorily answer the research questions.

4.28 RESEARCH VALIDITY

Establishing research validity is an important and essential aspect of any research work. Yin is of the opinion that research validity could be established through "multiple sources of evidence and establishing chains of evidence during the data collection process" (2003, p.34). In agreement with Yin, Creswell and Plano Clark explained that validity in mixed-methods research involve "employing strategies that address potential issues in data collection, data analysis, and the interpretations that might compromise the merging or connecting of the quantitative and qualitative strands of the study" (2011, p.417). According to Saunders *et al*., "various forms of validity have also been identified to ensure the quality of research" (2012, p.193). Although the issue of establishing validity of a study is closely associated with positivist and quantitative research (Saunders *et al.*,2012), Creswell and Plano Clark mentioned *construct validity* as a term native to quantitative research, but increasingly being used as an "umbrella validity concept for mixed-methods research" (2011, p.278). regarding reliability, Saunders *et al.,* stated that "reliability refers to whether the data collection and techniques and analytic procedures would produce consistent findings if they were repeated on another occasion or if they were replicated by a different researcher" (2012, p.192). In dealing with the issues of 'reliability' in mixed-method research, Creswell and Plano Clark, observed that "reliability has limited meaning in qualitative research, but it is popular in qualitative research when there is interest in comparing coding among several coders" (2012, p.212). Regarding reliability in the quantitative research, Creswell and Plano Clark noted that "scores received from participants are consistent and stable over time" (2012, p.211) And

regarding quantitative research, there is more focus on issues relating to validity than those of reliability (Saunders *et al.*, 2012). To establish the validity and reliability of this research work, the researcher relied on multiple sources of enquiries to link chains of evidences and to corroborate findings from various data and information through the triangulation of multiple sources of enquiry. The researcher relied on research interviews and documentary evidence to substantiate findings and research outcome.

4.29 RESEARCH GENERALISABILITY

Saunders *et al.,* stated that "use of mixed methods may help to establish the generalisability of a study or its relative importance" (2012, p.169). It was also observed that a careful selection of the research sample and the size of the sample is important to be able to make generalisation of the research outcome (Saunders *et a*l., 2012). The samples for this research work were drawn mainly from establishments of the Lagos State Government which included key government Ministries and Departments. Bryman (1988) cited in Saunders et al., (2012) pointed out that "many research projects adopting a survey strategy use samples restricted to one particular locality" (2012, p.383). Due to heterogeneous nature of Lagos State - it is often said that Lagos State is a melting pot of all major ethnic groups in Nigeria- the data collected from the Lagos State Ministries could be regarded as a fair representation of the Nigerian population which makes the generalisation of this research work a valid proposition for other geographical parts of Nigeria, albeit with some sense of caution as context may differ from one location to the other.

4.30 ETHICAL CONSIDERATION

The ethical consideration needed to carry out social research involves ethical principles that must be considered by the researcher before addressing the research issues. In general, ethics are codes or rules of engagement which governs professions and their practices (Saunders et al., 2012) These rules highlight how information of clients is to be used, and how the clients are to be managed appropriately. Ethical consideration is essential during a research work because the rights of the participants must be observed and not infringed upon.

Data used in this research work are kept confidential. The participants were informed of the nature and intents of the study. The participants volunteered freely to take part in the research work without any form of coercion.

Introduction letters, information sheets, and consent forms were distributed to the research participants. Participants were introduced to the aims of the research and the procedures to be followed during interview and filling questionnaire instrument. After the interview, participant's identifiable and personal information were coded by the researcher.

4.31 RESEARCH METHODOLOGY LIMITATIONS

The researcher is keenly aware of the various limitations of the research and does not claim that the research is devoid of flaws attributable to either human imperfections or weaknesses in the methodological choice and approach taken to conduct the research. Further refinements in methodology could be conducted in the future which may produce a more acceptable way of conducting E-government research.

The E-government framework the researcher has proposed in this study is not intended to be a perfect solution to the numerous challenges facing the public-sector service across Nigerian; but it provides an option that could provoke further debates on methodologies that are capable of delivering better E-government frameworks in Nigeria thus moving the discourse on efficient public-service delivery and good governance a step forward.

4.32 CONCLUSION

This chapter has described in detail the research structure and methodological choice of inquiry. The chapter explained different forms of research philosophies such as Positivism, Realism, Interpretivism, and Pragmatism, and provided the reasons for adopting pragmatism as the preferred choice of research philosophy adopted in this study. The chapter highlighted that pragmatism is usually the philosophical position adopted by mixed-methods researchers as opposed to the Positivist researcher. The chapter also set out the research approach for the study. The chapter gave the reasons for choosing a mixed-method approach which is often the most preferred and used approach by researchers who have adopted pragmatism as a research philosophy. Mixed methods allow the researcher ample room for flexibility in their approach to how they source and collect their research data. Quantitative research approach on the other hand does not

allow much flexibility in the choice of research approach and how survey instruments are designed and administered to research participants. Chapter four highlighted the research designs used in this study and provided justification for using the ‘exploratory sequential research design' as the most appropriate research design choice for this study. Exploratory sequential design allowed the researcher to triangulate on the research data by moving from the initial qualitative inquiry phase to a quantitative phase to interpret and generalise the research findings. The qualitative inquiry apart for serving to triangulate on research data and to provide themes for the quantitative phase of the research, also provided the means to validate and test the research data through survey mechanisms that involved larger participants.

Chapter four also discussed the sample sizes and techniques used and provided justifications for the choice of sampling technique adopted in this research work. The chapter discussed the data collection techniques and the criteria for selecting data collection instruments. The chapter briefly discussed the history, mission, and vision of the selected Ministries used as case studies in the research. The chapter explained how the research data were captured and the survey instruments were developed. The chapter also provided a brief description of the research participants and the organisations used in the study together with the criteria for selection of participants and the organisations. Chapter four concluded with a brief discussion on ethical consideration highlighting the importance of obtaining permissions to gain access and conduct interviews with selected research participants. The researcher detailed ethical issues pertaining to confidentiality and the need to secure sensitive and identifiable personal data that were entrusted to the care of the researcher. Chapter four concluded with a brief discussion on the limitations and delimitations of the research work.

The next chapter presented the results from the questionnaire survey.

CHAPTER 5

DATA PRESENTATION AND ANALYSIS

5.0 INTRODUCTION

This chapter presents the data relevant to the objectives of this research work.

The data presentation is two-fold, 1) Data for the qualitative strand, and 2) Data for the quantitative strand.

The qualitative strand made use of thematic analysis approach. The thematic analysis approach provided a framework that allows researcher to think about organising and analysing data by searching for themes (Bryman, 2008). According to Ryan and Bernard (2003) cited in Bryman (2008), an approach to use when looking for themes is to pay attention to repetitions (topics that are mentioned repeatedly), indigenous typologies or categories (local expressions that are either unfamiliar or are used in an unfamiliar way), metaphors and analogies (the way in which participants represent their thoughts in terms of metaphors or analogies), transitions (the way in which topics shift in transcripts and other materials) as well as similarities and differences (exploring how interviewees might discuss a topic in different ways or differ from each other in specific ways, or explore whole texts like transcripts and ask how they differ), linguistic connectors (examining the use of words), missing data (reflecting on what is not in the data by asking questions about what interviewees might have omitted in their answers to questions and why such omission), and theory-related material (using social scientific concepts as springboard for relevant themes).

The researcher made use of Nvivo10 which is a computer-assisted qualitative data analysis software to analyse the contents of the various documents and interviews conducted for the research work. Nvivo10 allowed the researcher to organise multiple themes and topics from diverse sources in a logical manner that makes for easy access when required during the write-up of the research findings.

The researcher became familiar with the data and themes relevant to the research by re-examining the transcripts from the research interviews several times, becoming immersed in the data and gaining a deeper understanding of the statements which are indicative of the central themes of the E-government phenomenon under investigation. The researcher after having identified the themes for the study proceeded to develop the survey

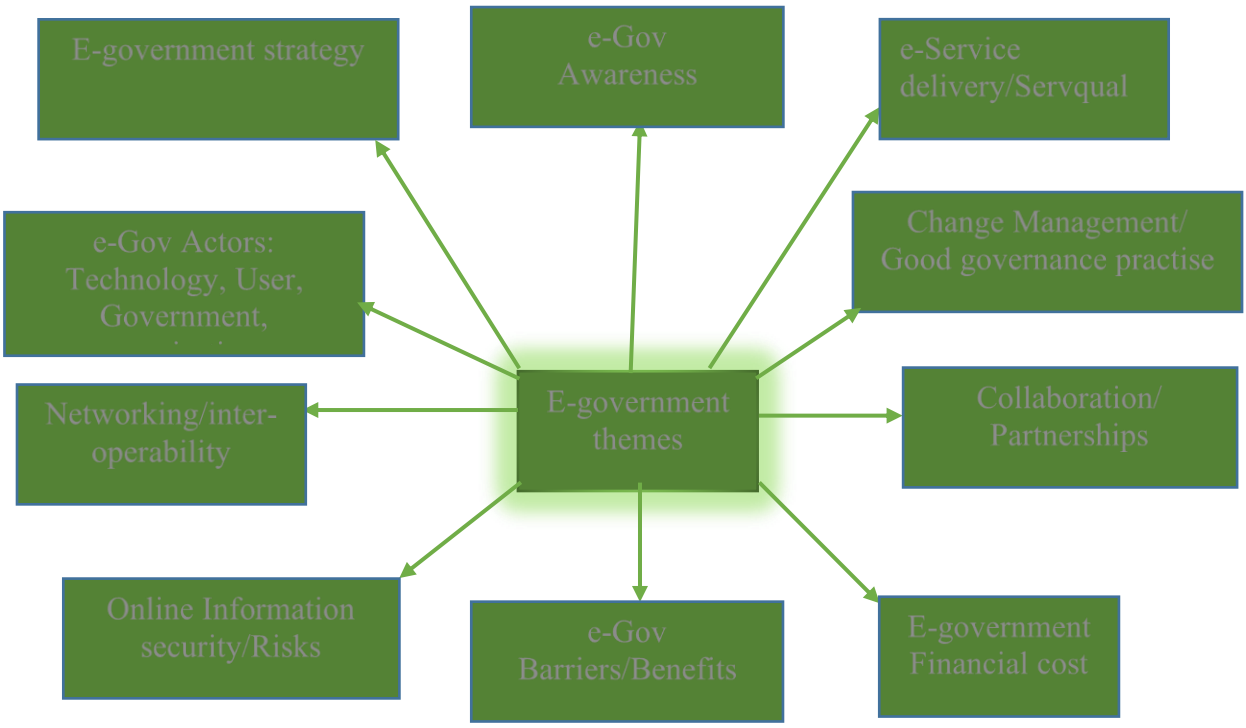
instruments that were used in the second phase (quantitative phase) of the research as required by the exploratory sequential design research approach (Creswell &Plano Clark, 2011).

The researcher made use of Statistical Package for the Social Sciences (SPSS) version 23 to analyse the quantitative data used in the research work and to conduct statistical analysis on the data from the research.

The views of the survey participants (senior managers and chief information officers) in section 'A' (supply-side participants) focused on E-government development in Nigeria. The survey aimed to ascertain the thoughts of organisation leaders in the public-sector organisations in Nigeria on factors impeding and promoting E-government development in Nigeria. The results of the research surveys are presented below.

5.1 RESEARCH OUTPUT (Qualitative)

Figure 27: Emergent E-government themes



Source: Research author

5.2 INTERVIEW ANALYSIS (Qualitative enquiry)

The researcher after interviewing the research participants (senior managers and chief information officers), at their various Ministries, handed them a comprehensive follow-up questionnaire on E-government (supply-side) covering the interview questions. Following the interview, the researcher conducted an analysis of the interview recordings and questionnaire to extract useful information about the respondent's views regarding E-government in their respective organisations. Highlights of the interviews and responses are provided below.

5.2.1 E-government awareness and strategy

Kindly tell me about your understanding of E-government, and does your organisation have an E-government strategy?

Participants (Senior managers and Senior Information Officers) were asked to freely discuss about their understanding of E-government and whether their organisations have E-government strategies in place.

A senior officer at the Ministry of Information and Strategy who was interviewed in responding to his understanding of E-government said "E-government centres on producing information about government to the general public and other users of government information electronically, i.e. through the use of modern technology such as the Internet". He continued "our Ministry is currently in change of updating government activities and programmes by making use of social media such as Facebook and Twitter to reach the general public". Corroborating this view was a Senior manager at the Ministry of Science and Technology who said that the Ministry of Science and Technology is already making extensive use of ICTs and the Internet to drive government processes such as e-Taxation. He affirmed that the Ministry of Science and Technology oversees the 'Global computerisation' of all Ministries in Lagos State.

A senior officer and Radiographer at the Lagos State Ministry of Health said that the Ministry of Health's E-government strategy is a long-term strategy at revamping how the Ministry engage the public. He said the current focus is aimed at making extensive changes to the Ministry's current websites to promote government activities targeted at the public with programmes and initiative on primary healthcare that improves the public and individual healthcare and wellbeing through online sensitisation programmes.

Most of the respondents also made mention of how their Ministries are upgrading their public websites to make them citizen centred and to provide interactive features that the public can use to engage the government and participate in governance.

5.2.2 E-government Benefits

Implementing E-government can bring several benefits to the organisation, which of the following benefit(s) do you think your organisation will benefit from, if it implements E-government? Please select all the options that applies to your organisation. And what other benefit(s) do you think your organisation might gain through implementing E-government services?

In responding to the question about *what benefit(s) do you think your organisation might gain through implementing E-government services?*, the responder from the Ministry of Information and Strategy said that additional benefits of E-government to his Ministry is the ability to streamline government activities through online processes, E-government programmes will enable wider reach of government programmes, and that implementing E-government would make for easy identification of ghost-worker in the Ministry. A senior manager at the Ministry of Finance said that a significant benefit of E-government in the Ministry of Finance is the effective and efficient use of government resources. This view was corroborated by the responder at the Ministry of Education who also observed that an important benefit of using E-government at the Ministry of Education is the resultant improvement in the "blocking of leakages of internally generated revenues" and an improvement of the quality of service delivery to customers. The participant from the Ministry of Tourism also said implementing E-government would improve productivity at the Ministry of Tourism.

5.2.3 E-government Barriers

What barriers do you think your organisation might encounter while implementing E-government? Please specify.

Most of the senior managers who responded to this question, indicated that the most worrying barrier to E-government implementation in their organisations is the issue of infiltration by Hackers. Also prominent among the challenges of E-government are issues

related to inconsistent Internet provision, issues relating to inadequate workforce and support infrastructure, and problems of fear of worker retrenchment due to the increasing use of technology at the Ministries.

5.2.4 Network Process

please tell me, what is your understanding of the Network process and how can you relate this to E-government development in Nigeria vis-à-vis Network Shared vision, Network Structure, Network incentives, Network partner selection, and Institutionalisation of Network goals?

The responder from the Ministry of Information and Strategy mentioned the importance of promoting Network unity, the need for mutual understanding when deciding on the Network goals and objectives. He also highlighted the importance of good orientation and communication strategy among all Network actors. A senior manager at the Ministry of Education discussed about proper motivation and enlightenment of the Network actors, and the need to create time for the Network actors to interact on a consistent basis towards improving the Network. The issues of creating time for Network actors to meet regularly was also picked up by the responder from the Ministry of Home Affairs who discussed about the need for Network Stakeholders to meet in discussion forums before taking decisions that will affect the entire Network. He added that the use of Network incentives to motivate Network actors towards complying with set objectives and the need to provide rewards for compliance with set Network objectives.

5.2.5 Change Management

Are you familiar with the word 'Change Management' in the context of people management within an organisation? Please explain.

Nine out of the twelve interviewees said they were familiar with the term 'Change management'. This indicates that the concept of managing change in an organisation is not new to the interviewees. Majority of the senior managers interviewed said their organisations was going through some form operational changes in line with the implementation of e-services initiatives that all Ministries and Departments of the Lagos State government has been mandated to comply with. A significant number of the

managers interviewed agreed that change is inevitable due to the constantly evolving approaches to governance and the intentions of the government of Lagos State to innovate public-service delivery in line with global best practises.

5.2.6 Good governance and practise guidelines

How important is 'good practice guidelines' at the development stage of E-government, and what does your organisation recognise as 'good practice guidelines?

The various Interviewees were asked about 'good practise guideline' on matters relating to E-government at the development stages and about considering simple project design with clear development objectives. Majority of the interviewees agreed that a simple project design with clear objectives is very important when considering E-government at the initial stages. The interviewees also agreed on the need for adequate support at governmental and organisational levels, together with a very careful selection of the appropriate technologies to fit the level of development of the host environment. Many of the respondents also stated the need for use of local content as part of the development process alongside the importance of inputs from the private sector and the need for ongoing support and maintenance from all E-government Stakeholders.

5.3 E-GOVERNMENT EMERGENT THEMES (Qualitative enquiry)

Table 16: The emergent E-government themes from the qualitative research enquiry

Themes	Keywords	Summary definitions
E-government Strategies	Government websites, Facebook, Twitter, Computer programs, global computerisation, Policy, Frameworks, Regulations.	Governmental and organisation's plans for using ICTs to deliver public services.
E-government Actors	Technologies, Users, Governments, Organisations	Individuals and artefacts responsible for developing E-government
Networking	Inter-operability, Government information	An interdependent arrangement involving multiple organisations

	Networks (GINs), Stakeholders	working together through mutual collaboration.
Online information security and risk issues	Data theft, Information theft, Hackers, Surveillance, Trust, Identity theft, hacker infiltration.	The security and risks factor that users of E-government are faced with when accessing government-to-citizen websites.
E-government barriers	Financial cost, inadequate power supply, Inadequate Infrastructure, retrenchments, Unskilled workforce, Illiteracy, Awareness issues, Lack of commitment (government and organisation)	The challenges faced by governments and organisation intending to use ICTs for public-service delivery.
E-government benefits	Streamlining governance, Improved productivity, Service effectiveness, Efficiency, resource management	The resultant effects of government's use of ICTs for public-service delivery
Collaboration	Partnerships, negotiations, consensus, Incentives, Trust, Mutual understanding, Sanctions, Motivation, Time factor.	The actions of working together towards mutually agreed goals and objectives.
Change management	Enlightenment programmes, Responsibility, Change Process, People management, Change ownership, Education, Negotiation, Support, Involvement.	The process of preparing and supporting organisations and individuals in making organisational changes.
good governance practise	Support, Local content, Political will, Project design, Communication, Technology, Maintenance.	Governmental and organisation guidelines at the development stage of E-government projects

Online Service quality (Servqual)	Data quality, Information quality, Appropriateness of information, Website design, Website functionality, broken web-links, Citizen support, Reliability, Trust, Ease of use.	A measure of the extent to which the provided service corresponds to the expectations of the clients.

Source: Extracts from literature review by the research author

5.4 RESEARCH OUTPUT (Quantitative)

The data presented below are based on the responses of the twelve (12) interviews conducted during this research work. SPSS Version 23 was used for the data analysis.

Demographics of the research participants

Table 17:Research participants age group

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	21-40	7	58.3	58.3	58.3
	41-50	5	41.7	41.7	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 research data output

Table 18: Research participants Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	7	58.3	58.3	58.3
	Female	5	41.7	41.7	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 research data output

Table 19: Research participants level of education

Level of education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	University degree	7	58.3	58.3	58.3
	Postgraduate degree	4	33.3	33.3	91.7
	others	1	8.3	8.3	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 research data output

5.4.1 E-government Strategy

Table 20: Research participants response to E-government Strategy: Does your organisation have e-Gov strategy?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	75.0	75.0	75.0
	No	3	25.0	25.0	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 research data output

Seventy-five percent (75%) of the senior managers and senior information officers which were interviewed said that their Departments have E-government strategies in place, while twenty-five percent (25%) of the senior managers surveyed suggested that their Departments have E-government sensitisation plans in place.

Table 21: Organisations currently planning for E-government use

Our organisation is currently planning for e-gov. use

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Box ticked by responder	3	25.0	25.0	25.0
	Response box unchecked	9	75.0	75.0	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 research data output

Table 22: Organisations making extensive use of ICTs

Our organisation makes extensive use ICT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Box ticked by responder	5	41.7	41.7	41.7
	Response box unchecked	7	58.3	58.3	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 research data output

Forty-one-point seven percent (41.7%) of the senior managers surveyed indicated that their Ministries are currently engaging in E-government sensitisation programmes. Research revealed that less than half of the total senior managers agreed that their Departments are already making extensive use of ICTs to improve their work processes.

5.4.2 E-government benefits

Table 23: Survey participants response to E-government benefit: Accountability and transparency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	1	8.3	8.3	8.3
	Very important	9	75.0	75.0	83.3
	Important	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 research data output.

Improved accountability and transparency

The survey results show that seventy-five percent (75%) of the senior government officials interviewed in their various Ministries agreed that improved accountability and transparency is a very important benefit of E-government with a further 16.7 % of the senior managers also agreed that accountability and transparency is an important consideration and benefit of using E-government in their various organisations. Ninety-one-point six percent (91.6%) of the senior managers interviewed agree that implementing E-government programmes in their various Ministries will have a positive and significant impact on reducing financial corruption in their Departments and Ministries.

Reduced overall cost of running an organisation

The survey revealed that forty-one-point seven percent (41.7%) of the senior officials and information managers surveyed agreed that a reduction in the cost of running their Ministries is a very important consideration for developing and implementing E-government services. An additional twenty-five percent (25%) of the senior managers that participated in the survey also agreed that implementing E-government is an important factor to reducing the cost of running their various Departments.

Table 24: Survey participants response to E-government benefit: reduced cost of running the organisation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	1	8.3	8.3	8.3
	Very important	3	25.0	25.0	33.3
	Important	5	41.7	41.7	75.0
	Very unimportant	1	8.3	8.3	83.3
	Question skipped by responder	1	8.3	8.3	91.7
	Response box unchecked	1	8.3	8.3	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 research data output.

Table 25: Survey Research participants response to E-government benefits: Improved Network and community cohesion

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	1	8.3	8.3	8.3
	Very important	6	50.0	50.0	58.3
	Important	5	41.7	41.7	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 research data output

Improve Network and community cohesion

The results from questionnaire survey and interviews indicated that ninety-one-point seven percent (91.7%) of the participants agreed that implementing E-government initiatives will have either a significant or very significant impact in improving community and Network cohesion between various government Departments and Ministries.

Table 26: Survey Research participants response to E-government benefits: promoting the use of ICTs within the organisation and public

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	1	8.3	8.3	8.3
	Very important	6	50.0	50.0	58.3
	Important	5	41.7	41.7	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 research data output

Promotes the use of ICT within an organisation and public

The survey results showed that fifty percent (50%) of the senior government officials interviewed agreed that developing and implementing E-government programmes is a very import way to promote the use of ICTs both within public-sector services and among the public. A further forty-one-point seven percent (41.7%) also agreed that E-government initiates will help to promote the use of ICTs in their various Departments.

Table 27: Survey Research participants response to E-government benefits: Promotes inter-agency collaboration

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	1	8.3	8.3	8.3
	Very important	8	66.7	66.7	75.0
	Important	3	25.0	25.0	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 research data output

Sixty-six-point seven percent of the interviewees agreed that inter-agency collaboration is a very important benefit of E-government projects as this allows government to function in a connected manner. A further twenty-five percent (25%) of the managers interviewed believe an important benefit of E-government to their organisations is that it promotes and encourages cross-agency information sharing which is vital to E-government development. Four out of the twelve interviewees agreed that E-government

is very important to the efforts of reducing corruption in the Departments, while a further seven said that E-government is important and helps in reducing corruption in their Departments. Only one out of the twelve senior managers interviewed is of a contrary opinion; saying that E-government is unimportant to reducing corruption in the Ministry where he works.

Table 28: Survey Research participants response to E-government benefits: Reduces corruption in public organisations

Reduces corruption in the organisation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very important	4	33.3	33.3	33.3
	Important	7	58.3	58.3	91.7
	Unimportant	1	8.3	8.3	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 research data output

Fifty-eight-point three percent of the managers interview across the Ministries agreed that E-government has the potential to reduce corruption in public-sector organisations, while thirty three point three percent said E-government is very important if government is serious about reducing corruption in public offices. Only one of the managers felt that E-government will not necessarily reduce corruption in organisation. He opined that corrupt civil servants will simply look for other ways to continue with their corrupt tendencies while in office.

5.4.3 E-government Barriers

Table 29: Research participants response to E-government barriers: E-readiness (Literacy, ICT infrastructure, Computer availability, Internet connectivity)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	2	16.7	16.7	16.7
	Very important	6	50.0	50.0	66.7
	Important	4	33.3	33.3	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 research data output.

5.4.4 E-government readiness

Fifty percent (50%) of the senior managers interviewed agreed that E-government readiness are very important issues such as low level of ICT infrastructure, low level of computer availability and Internet connectivity are issues currently hampering the development of E-government in their various Ministries. A further (33.3%) also said that E-readiness issues is affecting how their Ministries approach issues of E-government uptake. Two of the interviewees are of a neutral opinion saying that issues of E-readiness do not affect E-government use in their Departments.

Table 30: Research participants response to E-government barriers: Resistance to change among organisational Departments.

Resistance to change among organisational Departments

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	1	8.3	8.3	8.3
	Very important	3	25.0	25.0	33.3
	Important	8	66.7	66.7	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 research data output

5.4.5 Resistance to change among organisation Departments

The survey results showed that senior managers and heads of Departments see resistance to change among organisational Departments as essential to implementing changes within their organisations. 66.7% of the respondents to the survey agreed that resistance to change is an important and essential factor that must be considered to change how their organisations operate. In discussing the issue of resistance to change within an organisation, a further 25% of those surveyed agreed that resistance to change is a very important factor which they must be addressed before any meaningful change can occur in any organisation.

Table 31: Research participants response to E-government barrier: Lack of consistent government policy and legislative support.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	3	25.0	25.0	25.0
	Very important	1	8.3	8.3	33.3
	Important	7	58.3	58.3	91.7
	Unimportant	1	8.3	8.3	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 research data output

5.4.6 Lack of consistent government policy and legislative support

Evidence from this research survey indicated that high-level government officials recognised the need for consistent government policies and legislation to help drive E-government development. Fifty-eight-point three (58.3%) of senior managers surveyed agreed that lack of consistent government policy and legislative support is either important or very important factor which have had adverse effect on their Ministry's ability to develop adequate E-government programmes. They suggested that it is important for policymakers to set the overall strategic vision of government as it relates to E-government initiatives in the public-sector organisation. Twenty-five percent (25%) of the interviewees however chose to remain neutral on the lack of government policies and legislative support. They said as far as they are concerned, there are enough policy

and legislative guidelines on E-government in their various Ministries. They said they see E-government to suffer more from inability of Department leaders to implement the already existing policies due to incompetence or lack of willpower to do such.

Table 32: Research participants response to E-government barrier: High level of investment cost to participate in E-government

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	1	8.3	8.3	8.3
	Very important	3	25.0	25.0	33.3
	Important	7	58.3	58.3	91.7
	Unimportant	1	8.3	8.3	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 research data output

The survey results confirmed that the issue of inadequate funding of Ministries and Agencies in Lagos State and Nigeria has led to public organisations prioritising their resources. Fifty-eight-point three percent (58.3%) of the public-sector managers interviewed agreed that investment cost to participate in E-government is an important issue to them, while a further 16.7% said investment cost of E-government is a very important factor that must be considered before embarking on E-government projects. One of the senior managers interviewed said the cost of E-government is unimportant if government considers the overall benefit E-government would bring to both government and the citizens. Another interviewee decided to remain neutral, saying that the cost of E-government is “neither here nor there”, that what matters is the intention and purpose of developing E-government that will benefit the masses.

Table 33: Research participants response to E-government barrier: Complexity in understanding E-government systems and management's technical ability

Complexity in understanding the system; Management technical ability

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	2	16.7	16.7	16.7
	Very important	5	41.7	41.7	58.3
	Important	4	33.3	33.3	91.7
	Unimportant	1	8.3	8.3	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 research data output

Results from the research conducted as part of this research work indicated that 41.7% of senior information officers interviewed within the public-sector organisations agreed that complexity of E-government systems and the lack of adequate and skilled workforce coupled with low technical ability on the part of management is a very important and contributory factor impeding the growth of E-government in their various Ministries and Agencies. A further 25% of the participants also agreed that E-government complexity and unskilled management hampers E-government development in Nigeria as a whole. Two of the senior managers chose to be neutral in their view of E-government complexity and the issue of inadequate management skill as having adverse effect on E-government. They opined that Departmental leaders should do more to acquire relevant E-government skills or send employees on manpower development schemes that would improve their skillset and equip them with the needed skills to engage in E-government projects.

5.4.7 E-government risk factors

Table 34: Research participants response to E-government risk and security issues:

Information security: identity theft, data theft

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very significant	6	50.0	50.0	50.0
	Significant	3	25.0	25.0	75.0
	Neutral	2	16.7	16.7	91.7
	response box unchecked	1	8.3	8.3	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 research data output

Fifty percent (50%) of the senior managers interviewed said information security issues is a very significant consideration when considering E-government projects. A further 25% of them also agreed that issues of identity and data theft are significant issues that their Department considers when deciding on E-government projects. Two of the respondents were neural in their views on identity and data theft, they suggested that once adequate protective measures are put in place, the public should not worry too much about losing their data or identity to online theft.

Table 35: Research participants response to E-government service quality issues

Poor service quality: unstable Network, data loss, broken links

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very significant	6	50.0	50.0	50.0
	Significant	3	25.0	25.0	75.0
	Insignificant	2	16.7	16.7	91.7
	Response box unchecked	1	8.3	8.3	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 Research data output

Fifty percent of the senior officers interviewed agreed that unstable Networks, data loss, and broken links have very significant impact on the quality of online services. An

additional 25% of the interviewees also agreed that poor service quality have significant effect on E-government use and adoption at all levels. Two of the senior managers however differ considerably, saying that poor service quality does not necessarily have negative effect on E-government use in their various Departments. They mentioned that their Department is constantly improving their online services.

Table 36: Research participants response to E-government privacy issues

Privacy: Surveillance, background checks, data misuse

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very significant	2	16.7	16.7	16.7
	Significant	7	58.3	58.3	75.0
	Neutral	1	8.3	8.3	83.3
	Response box unchecked	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 Research data output

Regarding the issues of surveillance and data misuse, 58.3% of the senior managers agreed that that privacy is a significant issue and that lack of online information privacy is preventing more people from engaging in online transactions with government websites. 16.7% of the respondents also agreed that online privacy is a very important factor that must be carefully considered when implementing E-government projects.

5.5 E-GOVERNMENT DEVELOPMENT: NETWORK PROCESS

5.5.1 SHARED NETWORK VISION

Table 37: Research participants response to E-government shared Network vision: Negotiations

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	2	16.7	16.7	16.7
	Very important	4	33.3	33.3	50.0
	Important	5	41.7	41.7	91.7
	Unimportant	1	8.3	8.3	100.0
	Total	12	100.0	100.0	

Source: SPSS research data output

Table 38: Research participants response to E-government shared Network vision:

Consensus

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	1	8.3	8.3	8.3
	Very important	2	16.7	16.7	25.0
	Important	9	75.0	75.0	100.0
	Total	12	100.0	100.0	

Source: SPSS research data output

The survey result showed that 41.7% of the respondents agreed that negotiation is an important consideration within a shared Network vision. With a further 33.3% of those interviewed agreed that negotiation is very important in a shared Network arrangement. Two of the respondents remained neutral on the issue of negotiations. They said what is important in a Network is not negotiations, but the willingness to collaborate to achieve the Network interest. 75% of the managers interviewed agreed on the importance of reaching a consensus on the objectives and goals of the Network. A further 16.7% of the

respondents indicated that reaching a consensus is very important in any Network formation, observing that without consensus, the Network cannot survive.

Table 39: Research participants response to shared Network vision (Co-operation, Effective communication, and Collaboration)

Co-operation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	1	8.3	8.3	8.3
	Very important	8	66.7	66.7	75.0
	Important	3	25.0	25.0	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 Research data output

Effective communication

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very important	8	66.7	66.7	66.7
	Important	4	33.3	33.3	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 Research data output

Collaboration

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	1	8.3	8.3	8.3
	Very important	6	50.0	50.0	58.3
	Important	5	41.7	41.7	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 Research data output

Sixty-six-point seven percent (66.7%) of the interviewees agreed that co-operation and effective communication is very important to a shared Network vision with an additional 33.3% of the respondents agreed that effective communication is important to effective communication in a shared Network vision. 25% of the managers interviewed agreed that

co-operation is important to a shared Network vision, while 41.7% said collaboration is an important element in a shared Network vision. One manager remained neural issues bordering on collaboration and co-operation in a shared Network vision.

5.5.2 NETWORK STRUCTURE

Research participants response to E-government Network Structure process

Table 40: Gradual introduction of change

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	1	8.3	8.3	8.3
	Very important	7	58.3	58.3	66.7
	Important	4	33.3	33.3	100.0
	Total	12	100.0	100.0	

Source: SPSS research data output

Table 41: Negotiated change

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	4	33.3	33.3	33.3
	Important	6	50.0	50.0	83.3
	Unimportant	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 Research data output

Table 42: Mutually supportive change

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	1	8.3	8.3	8.3
	Very important	2	16.7	16.7	25.0
	Important	9	75.0	75.0	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 Research data output

Table 43: Spontaneous change

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	6	50.0	50.0	50.0
	Very important	1	8.3	8.3	58.3
	Important	2	16.7	16.7	75.0
	Unimportant	3	25.0	25.0	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 Research data output

Table 44: Continuous change

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very important	7	58.3	58.3	58.3
	Important	5	41.7	41.7	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 Research data output

The research result indicated that fifty-eight-point three (58.3%) of the senior managers interviewed believe ‘gradual introduction of change’ is very important when organisations are undergoing change. An additional 33.3% said introducing change in a gradual manner is important if the desirable outcome is to be achieved. Fifty percent (50%) of those interviewed agreed that ‘negotiated change’ is an important consideration, while seventy-five percent (75%) of the senior managers interviewed agreed that ‘mutually supportive change’ is an important process in a Network structure. Fifty-eight-point three percent (58.3%) of the research respondents believed ‘continuous change’ is very important for any organisation.

5.5.3 INCENTIVE DESIGN

Participant's response to E-government Incentive design process

Table 45: **Penalties**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	4	33.3	33.3	33.3
	Very important	2	16.7	16.7	50.0
	Important	3	25.0	25.0	75.0
	Unimportant	3	25.0	25.0	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 Research data output

Table 46: **Persuasion**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	1	8.3	8.3	8.3
	Very important	4	33.3	33.3	41.7
	Important	7	58.3	58.3	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 Research data output

Table 47: **Coercion**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	4	33.3	33.3	33.3
	Very important	1	8.3	8.3	41.7
	Important	4	33.3	33.3	75.0
	Unimportant	2	16.7	16.7	91.7
	Response box unchecked	1	8.3	8.3	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 Research data output

Table 48: **Contracts**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	1	8.3	8.3	8.3
	Very important	4	33.3	33.3	41.7
	Important	7	58.3	58.3	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 Research data output

The research outcome indicated that forty-one-point seven percent (41.7%) of the senior managers interviewed considered that 'penalties' are either very important or important elements that should be used to control the behaviour of Network participants. 33.3% of the respondents were however neutral on the use of penalties within a Network arrangement. They opined that due to the mutual objectives of the Network, using penalties to punish members of the Network is counterproductive and should be discouraged. Fifty-eight-point three (58.3%) of the managers interviewed agreed that using 'persuasions' is an important element to incentivise Network participants. The same percentage (58.3%) of research participant equally agreed that issuing 'Contracts' to Network participants is an important incentive that must be considered within a Network arrangement. Thirty-three point- three percent (33.3%) of the senior managers interviewed however favoured using some form of 'coercion' to control the behaviour of the Network actors.

5.5.4 INTERNALISATION OF NETWORK GOALS

Table 49: Research participants response to E-government process of Internalisation of Network goals and objectives

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Others	1	8.3	8.3	8.3
	Yes	10	83.3	83.3	91.7
	No	1	8.3	8.3	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 Research data output

The results from this research survey indicated that eighty-three-point three percent (83.3%) of the senior managers surveyed agreed that internalisation of the Network goals is important consideration for the success of any Network arrangement. One of the managers interviewed did not agree with internalisation of Network goals and objectives. He opined that internalisation of Network goals does not necessarily have any impact on E-government use in his Department.

5.5.5 NETWORK PARTNER SELECTION

Research participants response to Network partner selection

Table 50: **Reputation of actors in the Network**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	1	8.3	8.3	8.3
	Very important	5	41.7	41.7	50.0
	Important	6	50.0	50.0	100.0
	Total	12	100.0	100.0	

Source: SPSS research data output

The research results indicated that ninety-one-point seven percent (91.7%) of the managers interviewed agreed that the ‘reputation’ of Network partners is either very import or important consideration in selecting partners that would take part in the Network. Fifty percent (50%) of the senior managers interviewed agreed that ‘resource availability’ and ‘Network harmony’ are very important elements that needs to be considered carefully when selecting Network partners. A further 41.7% of the managers

interviewed agreed that resource availability is an important consideration when selecting Network partners. Fifty-eight-point three percent (58.3%) of the managers surveyed argued that 'Trust' is an important factor that must be considered when selecting Network partners. Forty-one-point seven (41.7%) percent of the managers went further by saying that issues relating to 'trust' is not only an import consideration, but a very important factor that needs to be addressed when selecting Network partners.

Table 51: **Autonomy of Actors**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	4	33.3	33.3	33.3
	Very important	1	8.3	8.3	41.7
	Important	6	50.0	50.0	91.7
	Unimportant	1	8.3	8.3	100.0
	Total	12	100.0	100.0	

Source: SPSS research data output

In selecting Network partners, fifty percent (50%) of the senior managers interviewed agreed that autonomy of actors is an important consideration. A responder from the Ministry of Transportation argued that each organisation is an autonomous entity prior to joining a Network, and being an autonomous entity, they have peculiar ways in which they conduct their daily business. He further stated that though their firm collaborate on multiple platforms with other governmental Agencies, they retain their autonomy as a separate organisation. 33.3% of other interviewees remained neutral on the issue of autonomy. Seventy-five percent (75%) of senior managers interviewed believe the collective minds of Network actors is an important consideration in selecting Network partners, while 25% of those survey also agreed that the collective minds of Network actor is a very important element that must be taken very seriously. A responder from the Ministry of Information and Strategy said that 'unity of purpose' is essential to any successful Network arrangement.

Table 52: **Harmony of Network interests**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	2	16.7	16.7	16.7
	Very important	6	50.0	50.0	66.7
	Important	4	33.3	33.3	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 Research data output

Table 53: **Collective minds of actors within Networks**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very important	3	25.0	25.0	25.0
	Important	9	75.0	75.0	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 Research data output

Table 54: **Resource availability**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	1	8.3	8.3	8.3
	Very important	6	50.0	50.0	58.3
	Important	5	41.7	41.7	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 Research data output

5.6 CHANGE MANAGEMENT

Table 55: Participants response to familiarity with term 'change management' in the context of people management in your organisation?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	75.0	75.0	75.0
	No	2	16.7	16.7	91.7
	Question skipped by responder	1	8.3	8.3	100.0
	Total	12	100.0	100.0	

Source: SPSS research data output

When asked about 'Change management' seventy-five percent (75%) of the senior managers and information officers said they are aware about change management with respect to employee management in their various Departments. Two of the respondents (16.7%) said they are not aware about change management in the context of managing employees in their respective Ministries, while a single responder skipped the question.

Interviewees were asked to please rank the following requirements about CHANGE in order of importance to your organisation on a scale of 1-9 (1-3 =High; 4-6= Medium; 7-9 = Low)

Research participants response to change management

Table 56: **Organisation exists in a state of continuous change**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Box ticked by responder	7	58.3	58.3	58.3
	Question skipped by responder	1	8.3	8.3	66.7
	Box unchecked by responder	4	33.3	33.3	100.0
	Total	12	100.0	100.0	

Source: SPSS research data output

The results above show that 58.3% of the research participants agreed that their organisation exist in a state of continuous change. 33.3% of the participants does not agree that the organisation they work in exist in a state of continuous change. One of the respondents skipped the question.

Regarding whether their organisations exist in long periods of stability with little change, 83.3% disagreed, while one of the senior managers who responded to the questionnaire was of a contrary opinion. One respondent skipped the question.

Table 57: **Organisation exists in long periods of stability with little change required**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Box ticked by responder	1	8.3	8.3	8.3
	Question skipped by responder	1	8.3	8.3	16.7
	Box unchecked by responder	10	83.3	83.3	100.0
	Total	12	100.0	100.0	

Source: SPSS research data output

The results in tables below showed that 25% of the respondents believe their Departments within their Ministry deal with change whenever the need arise, while 66.7% are of a contrary opinion. One respondent skipped the question.

Table 58: **Organisation deals with change as it deems fit**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Box ticked by responder	3	25.0	25.0	25.0
	Question skipped by responder	1	8.3	8.3	33.3
	Box unchecked by responder	8	66.7	66.7	100.0
	Total	12	100.0	100.0	

Source: SPSS research data output

On the issue relating to ‘believe in change’ or ‘business as usual’, 91.7% of the research participant indicated that they believe in ‘change’ occurring within the respective Departments. One respondent skipped the question.

Table 59:

The organisation does not believe in change. It does business as usual

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Question skipped by responder	1	8.3	8.3	8.3
	Box unchecked by responder	11	91.7	91.7	100.0
	Total	12	100.0	100.0	

Source: SPSS research data output

The results presented in table below showed that 66.7% of the senior managers surveyed indicated that they understand why change is happening in their organisations. Understanding of why change is happening falls into the high rank category.

The research participants response to ‘why change is happening in their organisations’

Table 60: **Understand why change is happening**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High(1-3)	8	66.7	66.7	66.7
	Medium (4-6)	1	8.3	8.3	75.0
	Low (7-9)	1	8.3	8.3	83.3
	Question skipped by responder	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

Source: SPSS research data output

Table 61: **Conscious that key personnel are involved in the change process**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High (1-3)	8	66.7	66.7	66.7
	Medium (4-6)	1	8.3	8.3	75.0
	Low (7-9)	1	8.3	8.3	83.3
	Question skipped by responder	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

Source: SPSS research data output

Results showed that 66.7% (high band) of the senior managers are conscious that key personnel are involved in the change process in their organisations. One of the respondents was not conscious about the involvement of key personnel in the change process, while another respondent skipped the question.

Table 62: **Believes everyone is focused on goals and objectives of the change process**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High (1-3)	6	50.0	50.0	50.0
	Medium (4-6)	2	16.7	16.7	66.7
	Low (7-9)	2	16.7	16.7	83.3
	Question skipped by responder	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

Source: SPSS research data output

50% of the managers' survey indicated that they believe everyone should be focused on the goals and objectives of the change process. 16.7% gave a medium ranking (4-6) to the believe that everyone in the organisation should be focused on the goals of the change process, while two of the respondents skipped the question.

Table 63: **Being able to take ownership and influence the change.**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High (1-3)	6	50.0	50.0	50.0
	Medium (4-6)	3	25.0	25.0	75.0
	Low (7-9)	1	8.3	8.3	83.3
	Question skipped by responder	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

Source: SPSS research data output

The table on 'being able to take ownership and influence change', showed that 50% of the survey respondent agreed taking ownership and influencing change should have a high priority, while 25% of the respondents said taking owner and influencing change show be ranked as medium (4-6) on the scale of preference of an organisation change ranking of events. One of the respondents believes taking owner and influencing change is of low ranking in order of preference in his Department.

Table 64: **Knowing someone is responsible for overall change project**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High (1-3)	7	58.3	58.3	58.3
	Medium (4-6)	1	8.3	8.3	66.7
	Low (7-9)	2	16.7	16.7	83.3
	Question skipped by responder	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

Source: SPSS research data output

Results below show that 58.3% of the senior manager that responded to the survey indicated that 'knowing someone is responsible for the overall change project' should be ranked high. 16.7% of the managers said that 'knowing someone is responsible for the overall change project' should be have moderate ranking in the scale of preference. Two of the respondents skipped the question.

Table 65: **Getting adequate assistance and support from project owners**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High (1-3)	7	58.3	58.3	58.3
	Medium (4-6)	2	16.7	16.7	75.0
	Low (7-9)	1	8.3	8.3	83.3
	Question skipped by responder	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

Source: SPSS research data output

Result table above show that 58.3% of the senior public officers that took part in this research work agreed that 'getting adequate assistance and support from project owners' should be classified as high ranking in the preference scale of organisation change ranking. 8.3% see 'getting adequate assistance and support from project owners' as medium ranking, while 16.7% 'getting adequate assistance and support from project owners' as low ranking in the scale of preference for organisation change ranking.

Table 66: **Recognise change is being implemented by skilled people in consistent manner**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High (1-3)	8	66.7	66.7	66.7
	Medium (4-6)	1	8.3	8.3	75.0
	Low (7-9)	1	8.3	8.3	83.3
	Question skipped by responder	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

Source: SPSS research data output

Results in table shows that 66.7% of the senior managers who took part in this survey agreed that recognising change is being implemented by skilled people in consistent manner should be ranked high in organisational change ranking scale. One respondent

ranked this item low, while another ranked it as medium in the organisational change scale.

Results in table below shows that 66.7% of the senior managers who took part in this survey agreed that ‘understanding the change project recognises the organisation’s dependencies’ should be ranked high in organisational change ranking scale. One respondent ranked ‘understanding the change project recognises the organisation’s dependencies’ low in order of preference, while another ranked it as medium in the organisational change scale of preferences.

Table 67: **Understand the change project recognises the organisation's dependencies**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High (1-3)	8	66.7	66.7	66.7
	Medium (4-6)	1	8.3	8.3	75.0
	Low (7-9)	1	8.3	8.3	83.3
	Question skipped by responder	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

Source: SPSS research data output

Results in the table below shows that 58.3% of the senior managers who took part in this survey agreed that ‘appreciation of how change will happen and proper communication to all involved’ should rank high in the organisational change ranking table. 16.7% of the managers ranked ‘appreciation of how change will happen and proper communication to all involved’ as having a medium ranking in the scale of preference table for organisational change ranking. Two of the respondents skipped the question on the ranking of ‘appreciation of how change will happen and proper communication to all involved’.

Table 68: **Appreciation of how change will happen and proper communication to all involved**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High (1-3)	7	58.3	58.3	58.3
	Medium (4-6)	2	16.7	16.7	75.0
	Low (7-9)	1	8.3	8.3	83.3
	Question skipped by responder	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

Source: SPSS research data output

Results in the table below show that 58.3% of the senior managers who took part in this survey believes that outcome of the change project will be beneficial to all and should rank high in the organisational change ranking table. 8.3% of the senior managers ranked the 'believe that outcome of change project will be beneficial to all' as having a medium ranking in the scale of preference table for organisational change ranking, while 16.7% of the senior managers ranked the item low on the scale of preference table. Two of the respondents skipped the question.

Table 69: **Believes that outcome of change project will be beneficial to all**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High (1-3)	7	58.3	58.3	58.3
	Medium (4-6)	1	8.3	8.3	66.7
	Low (7-9)	2	16.7	16.7	83.3
	Question skipped by responder	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

Source: SPSS research data output

The tables below show participant level of agreement to ‘change approach’ strategies

Table 70: **Education and communication**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	8	66.7	66.7	66.7
	Agree	1	8.3	8.3	75.0
	Disagree	1	8.3	8.3	83.3
	Question skipped by responder	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

Source: SPSS research data output

Table 71: **Participation and involvement**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	5	41.7	41.7	41.7
	Agree	5	41.7	41.7	83.3
	Question skipped by responder	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

Source: SPSS research data output

Table 72: **Facilitation and support**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	1	8.3	8.3	8.3
	Strongly agree	6	50.0	50.0	58.3
	Agree	3	25.0	25.0	83.3
	Question skipped by responder	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

Source: SPSS research data output

The tables above showed senior managers and senior information officers of the selected Ministries that participated in the research inquiry that 66.7% of them agreed very strongly about managing change through education and communication. 41.7% of the respondents agreed very strongly on using participation and involvement as a change approach, while 50% of the senior managers who completed the survey agreed very strongly on using facilitation and support as a change approach. An additional 41.7% of the participants also agreed on using 'participation and involvement' as a change approach, while 25% agreed on using 'facilitation and support' as a change approach. Two of the respondents skipped all three-change approach strategy.

5.7 E-GOVERNMENT GOOD-PRACTISE GUIDELINES (DEVELOPMENTAL STAGE)

Good-practise guidelines

The tables below show research participants response to 'good-practise guidelines' (Simple project design and Understanding and support from executing Agency)

Table 73: **Simple project design and with clear development objectives**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very important	5	41.7	41.7	41.7
	Important	5	41.7	41.7	83.3
	Question skipped by responder	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

Source: SPSS research data output

Table 74: **Excellent understanding and support from project executing agency**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	1	8.3	8.3	8.3
	Very important	5	41.7	41.7	50.0
	Important	4	33.3	33.3	83.3
	Question skipped by responder	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

Source: SPSS research data output

The research outcome showed that forty-one-point seven percent of the respondents agreed that simple project is a very important practise guideline at the development stage of E-government. A further 41.7% of the senior managers interviewed also considered simple project design to be an important practise that must be encouraged especially at the initial stages on E-government development. five out of the twelve interviewees said an excellent understanding and support from the Agency handling the development of the E-government project is very important if the end-users are to benefit from the project. An additional four of the respondents also agreed that an excellent understanding and support from the project execution team is an important consideration if the project is to succeed. One of the twelve responders chose to remain neutral, saying that "understanding and support from project execution team does not make E-government use any better in the organisation where he works". He argued that the intention to use E-government lies with the ultimate users and not the level of support provided by the project developers. Two interviewees decided to skip the question on the importance of understanding and support from the project execution team.

The tables below show the research participants response to 'good-practise guidelines' (Strong User demand and Interest from the private-sector organisations)

Table 75: **Strong user demand**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	1	8.3	8.3	8.3
	Very important	2	16.7	16.7	25.0
	Important	7	58.3	58.3	83.3
	Question skipped by responder	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

Source: SPSS research data output

Table 76: **Interest from the private sector**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	1	8.3	8.3	8.3
	Very important	2	16.7	16.7	25.0
	Important	7	58.3	58.3	83.3
	Question skipped by responder	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

Source: SPSS research data output

Results above shows that 58.3% of the respondents indicated that strong user demand is an important practise guideline, 16.7% of the respondents considered strong user demand as very important factor and a good practise guideline. One responder remained neutral on the issue of user demand, while another two of the respondents skipped the question. Regarding interest from the private-sector organisations, results showed that 58.3% of the respondents indicated that inputs from the private-sector is an important practise guideline, while a further 16.7 % of the respondents agreed that interests from the private-sector is a very important and good practise guideline. Two of the survey respondents skipped the question.

The tables below show research participants response to ‘good-practise guidelines’ (Tailor project to host environment and availability of support infrastructure)

Table 77: **Tailor project to the host environment**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very important	4	33.3	33.3	33.3
	Important	6	50.0	50.0	83.3
	Question skipped by responder	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

Source: SPSS research data output

Table 78: **Availability of support infrastructure for development process**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very important	1	8.3	8.3	8.3
	Important	9	75.0	75.0	83.3
	Very unimportant	1	8.3	8.3	91.7
	Question skipped by responder	1	8.3	8.3	100.0
	Total	12	100.0	100.0	

Source: SPSS research data output

The outcome of the research showed that while seventy-five percent (75%) of the senior managers interviewed agreed that availability of support infrastructure is an important E-government good practise guideline, while 8.3% of the respondents said that availability of support infrastructure for E-government development is either very unimportant or decided to skip the question. 50% of the interviewees agreed that tailoring the project to the host environment is an important and good practise guideline, 33.3% of the interviewees went further by saying that tailoring the project to the host environment is a

very important and good practise in E-government development. Two of those interviewed chose to skip the question on whether tailoring the project to the host environment is a good practise guideline in E-government development and practise.

The tables below show research participants response to 'good-practise guidelines' (Adequate political support and on-going support and maintenance)

Table 79: **Ongoing support and maintenance**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very important	6	50.0	50.0	50.0
	Important	4	33.3	33.3	83.3
	Question skipped by responder	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

Source: SPSS research data output

Table 80: **Adequate political support**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	1	8.3	8.3	8.3
	Very important	5	41.7	41.7	50.0
	Important	4	33.3	33.3	83.3
	Question skipped by responder	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

Source: SPSS Ver.23 Research data output

Research results indicated that 41.7% of the senior managers and information officers interviewed agreed that adequate political support is very important and good practise guideline for E-government development. Additional 33.3% also agreed that adequate political support is important and considered as a good practise guideline for E-

government in their respective Ministries. One responder is of a neutral view and two responders skipped the question. 50% of those interviewed considered ongoing support and maintenance as very important and good practise guideline, while a further 33.3% of the interviewees also agreed that ongoing support and maintenance is import and considered to be a good practise guide. Two of the respondents skipped the question.

5.8 DATA PRESENTATION (E-government demand-side)

The survey questionnaire from the E-government supply-side was simplified and made available to two-hundred employees of Lagos State government Ministries, Departments and Agencies who use E-government services. One-hundred and eight questionnaires were returned and correctly completed. The outcome of the survey is presented below.

Demographics of research participants (demand-side)

Table 81: **Gender of the research participants**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	68	63.0	63.0	63.0
	Female	40	37.0	37.0	100.0
	Total	108	100.0	100.0	

Table 82: **Age group of Participants**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	16-20	5	4.6	4.6	4.6
	21-30	26	24.1	24.1	28.7
	31-40	39	36.1	36.1	64.8
	41-50	31	28.7	28.7	93.5
	Above 50	7	6.5	6.5	100.0
	Total	108	100.0	100.0	

Table 83: **Level of education attained**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No formal education	2	1.9	1.9	1.9
	Primary school	3	2.8	2.8	4.6
	Secondary school	21	19.4	19.4	24.1
	University degree	62	57.4	57.4	81.5
	Postgraduate degree	18	16.7	16.7	98.1
	Question skipped	2	1.9	1.9	100.0
	Total	108	100.0	100.0	

Table 84: **Income level of participants**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 20000 Naira	10	9.3	9.3	9.3
	20000-50000 Naira	40	37.0	37.0	46.3
	51000-100000 Naira	26	24.1	24.1	70.4
	Above 100000 Naira	25	23.1	23.1	93.5
	Question skipped	7	6.5	6.5	100.0
	Total	108	100.0	100.0	

Source: SPSS research data output (Research Author)

5.8.1 Demography

Age group

16-20 years of age represents 4.6%, 21-30 years of age represents 24.1%, 31-40 years of age represents 31.6%, 41-50 years of age represents 28.7%, and above 50 years old represents 6.5% of the population surveyed.

Level of monthly income

Employees earning below 20,000 Naira per month represents 9.3%, employees earning between 20,000 and 50,000 represents 37%, employees earning between 51,000 and 100,000 represents 24.1%, and employees earning above 100,000 per month represents 23.1% of the survey participants. Seven peoples skipped the question on income.

Level of academic education

Employees with no formal education represents 1.9%, employees with primary school education represents 2.8%, employees with a secondary school education represents 19.4%, employees with a university degree represents 57.4%, employees with a postgraduate education represents 16.7% of those surveyed. Two (1.9%) of the survey participants did not answer the question on level of education attained.

5.9 E-GOVERNMENT AWARENESS AND USAGE

The tables below show the research participants knowledge of the term 'Electronic government'

Table 85: Participants response to the awareness of the term 'Electronic Government'

Have you heard of the term Electronic Government?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	62	57.4	57.4	57.4
	No	39	36.1	36.1	93.5
	Question skipped	7	6.5	6.5	100.0
	Total	108	100.0	100.0	

Source: SPSS research data output

The analysis of the survey questionnaires carried out during the course of this research work revealed that out of the one hundred and eight (108) that responded to the survey

questionnaire, sixty-two percent (57.4%) indicated that they are aware of the E-government programmes and strategies their various Ministries have put in place to develop and implement E-government projects. While thirty-six point-one percent (36.1%) said that they are not aware of E-government strategies in their respective Departments. Seven participants skipped the question.

Table 86: Frequency of Internet use by the research participants

How often do you use the Internet?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	At least once daily	36	33.3	33.3	33.3
	At least once a week	8	7.4	7.4	40.7
	At least once every two weeks	5	4.6	4.6	45.4
	At least once a month	10	9.3	9.3	54.6
	Constantly online	45	41.7	41.7	96.3
	Response box unchecked	4	3.7	3.7	100.0
	Total	108	100.0	100.0	

Source: SPSS research data output

Survey results showed that 33.3% of the participants use the Internet at least once daily. 41.7% of the respondents said that they are constantly online, 7.4% of the respondents said they access the Internet at least once a week, 4.6% of the participants said that they use the Internet at least once every two weeks, and 9.3% of the respondents said that they use the Internet at least once every month. 3.7% of the research participants skipped the question about how often they use the Internet.

Table 87: Research participants satisfaction level with cost of their Internet connection

How satisfied are you with your Internet connection cost?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very satisfied	12	11.1	11.1	11.1
	Satisfied	36	33.3	33.3	44.4
	Neutral	24	22.2	22.2	66.7
	Dissatisfied	17	15.7	15.7	82.4
	Very dissatisfied	7	6.5	6.5	88.9
	Question skipped	6	5.6	5.6	94.4

	Response box unchecked	6	5.6	5.6	100.0
	Total	108	100.0	100.0	

Source: SPSS research data output

Survey result showed 11.1% of the participants indicated that they are very satisfied with the cost of their Internet service, while 33.3% also said they are satisfied with the cost of their Internet service. 22.2% of the respondents said that they are neutral regarding the cost of their Internet connection, while 15.7% are dissatisfied with the cost of their Internet service. 6.5% of the survey participants said they are very dissatisfied with their Internet cost and six participants did not answer the question on how satisfied they are with the cost of their Internet connection.

Table 88: Research participants satisfaction level with the quality of Internet services

How satisfied are you with your Internet Quality of Service

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very satisfied	7	6.5	6.5	6.5
	satisfied	38	35.2	35.2	41.7
	Neutral	22	20.4	20.4	62.0
	Dissatisfied	16	14.8	14.8	76.9
	Very dissatisfied	2	1.9	1.9	78.7
	Question skipped	6	5.6	5.6	84.3
	Response box unchecked	17	15.7	15.7	100.0
	Total	108	100.0	100.0	

Source: SPSS research data output

Survey result showed 6.5% of the participants indicated that they are very satisfied with the quality of their Internet service, while 35.2% also said they are satisfied with the quality of their Internet service. 20.4% of the respondents said that they are neutral regarding the quality of their Internet service, while 14.8% are dissatisfied with the quality of their Internet service. 1.9% of the survey participants said they are very dissatisfied with their quality of their Internet service and seventeen participants did not answer the question on how satisfied they are with the quality of their Internet service.

Table 89: Research participants satisfaction level with Internet provider customer support services

How satisfied are you with your Internet provider customer support?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very satisfied	4	3.7	3.7	3.7
	satisfied	30	27.8	27.8	31.5
	Neutral	30	27.8	27.8	59.3
	Dissatisfied	19	17.6	17.6	76.9
	Question skipped	8	7.4	7.4	84.3
	Response box unchecked	17	15.7	15.7	100.0
	Total	108	100.0	100.0	

Source: SPSS research data output

Survey result showed that 3.7% of the participants indicated that they are very satisfied with the support they receive from their Internet service provider, while 27.8% also said they are satisfied with the support they receive from their Internet service provider. 27.8% of the respondents said that they are neutral (neither satisfied nor dissatisfied) regarding the support they get from their Internet service provider. 17.6% are dissatisfied with the support they get from their Internet service provider. Seventeen participants skipped the question.

The tables below show the research participants response to E-government online Information Security issues (Online privacy and Internet hacking

Table 90: **Importance of online privacy**

How important is Online Privacy to you?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	11	10.2	10.2	10.2
	Very important	43	39.8	39.8	50.0
	Important	32	29.6	29.6	79.6
	Very unimportant	1	.9	.9	80.6
	Question skipped	13	12.0	12.0	92.6
	Response box unchecked	8	7.4	7.4	100.0
	Total	108	100.0	100.0	

Table 91: **Importance of Internet hacking**

How important is Internet hacking to you?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	12	11.1	11.1	11.1
	Very important	42	38.9	38.9	50.0
	Important	23	21.3	21.3	71.3
	Unimportant	3	2.8	2.8	74.1
	Very unimportant	1	.9	.9	75.0
	Question skipped	14	13.0	13.0	88.0
	Response box unchecked	13	12.0	12.0	100.0
	Total	108	100.0	100.0	

Source: SPSS research data output

Research result showed that 39.8% of the survey participants indicated that online privacy issues are very important considerations that must be weighed before using private data on government websites. 29.6% also agreed that online privacy is an important issue when considering using personal data on public websites. Regarding the issue of Internet hacking, 38.9% considered it to be very important issue when going unto public websites, while 21.3% also see Internet hacking as an import issue that must be taken seriously when surfing public websites. 2.8% considers Internet hacking to be unimportant when visiting public websites, while 0.9% said Internet hacking issues is very unimportant to him when using public websites. Fourteen individuals skipped the question on Internet hacking and thirteen individuals skipped the question online privacy issues.

Table 92: **Internet Security issues**

How important is Internet identity theft to you?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	10	9.3	9.3	9.3
	Very important	39	36.1	36.1	45.4
	Important	28	25.9	25.9	71.3
	Unimportant	3	2.8	2.8	74.1
	Question skipped	14	13.0	13.0	87.0
	Response box unchecked	14	13.0	13.0	100.0
	Total	108	100.0	100.0	

Table 93: **Internet Trust**

How important is Internet Trust to you?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	9	8.3	8.3	8.3
	Very important	43	39.8	39.8	48.1
	Important	28	25.9	25.9	74.1
	Unimportant	2	1.9	1.9	75.9
	Very unimportant	1	.9	.9	76.9
	Question skipped	12	11.1	11.1	88.0
	Response box unchecked	13	12.0	12.0	100.0
	Total	108	100.0	100.0	

Source: SPSS research data output

Research result showed that 36.1% of the survey participants indicated that identity theft issues are very important considerations that must be weighed before using personal data on government websites. 25.9% also agreed that identity theft is an important issue when considering using personal data on public websites. 2.8% of the survey participants considers identity theft to be unimportant when going online. Fourteen individuals skipped the question about identity theft. Regarding the issue of Internet trust, 39.8% considered it to be very important issue when going on public websites, while 25.9% of the survey respondents also see Internet trust as an import issue that must be taken

seriously when accessing public websites. 1.9%% considers Internet trust issues to be unimportant when visiting public websites, while 0.9% said Internet trust issues is very unimportant to them when using public websites. Twelve individuals skipped the question on Internet trust, while fourteen individuals did not respond to the question on identity theft.

5.10 NIGERIAN GOVERNMENT INTERNET PORTAL ATTRIBUTES

The tables below show research participants response to satisfaction level with the Lagos State government Ministries' Websites design.

Table 94: **Appropriateness of customer interface and usability**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very satisfied	10	9.3	9.3	9.3
	Satisfied	35	32.4	32.4	41.7
	Neutral	22	20.4	20.4	62.0
	Dissatisfied	12	11.1	11.1	73.1
	Very dissatisfied	3	2.8	2.8	75.9
	Question skipped	20	18.5	18.5	94.4
	Response box unchecked	6	5.6	5.6	100.0
	Total	108	100.0	100.0	

Source: SPSS research data output

Survey result showed 9.3% of the participants indicated that they are very satisfied with the Nigerian government web portal appropriateness of customer interface and usability, while 32.4% also said they are satisfied with the Nigerian government web-portal appropriateness of customer interface and usability. 20.4% of the respondents said that they are neutral regarding the Nigerian government web-portal appropriateness of customer interface and usability, while 11.1% are dissatisfied with the Nigerian government web-portal appropriateness of customer interface and usability. 2.8% of the survey participants said they are very dissatisfied with the Nigerian government web-

portal appropriateness of customer interface and usability, while twenty participants did not answer the question on the section dealing with Nigerian government web-portal appropriateness of customer interface and usability.

Table 95: **Accuracy and information sufficiency**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very satisfied	11	10.2	10.2	10.2
	Satisfied	38	35.2	35.2	45.4
	Neutral	18	16.7	16.7	62.0
	Dissatisfied	10	9.3	9.3	71.3
	Very dissatisfied	2	1.9	1.9	73.1
	Question skipped	21	19.4	19.4	92.6
	Response box unchecked	8	7.4	7.4	100.0
	Total	108	100.0	100.0	

Source: SPSS research data output

Evidence from the research data showed that 10.2% of the participants indicated that they are very satisfied with the Nigerian government web-portal's accuracy and information sufficiency, while 35.2% also said they are satisfied with the Nigerian government web-portal's accuracy and information sufficiency. 16.7% of the respondents said that they are neutral regarding the Nigerian government web-portal's accuracy and information sufficiency, while 9.3% are dissatisfied with the Nigerian government web-portal's accuracy and information sufficiency. 1.9% of the survey participants said they are very dissatisfied with the Nigerian government web-portal's accuracy and information sufficiency, while twenty-one participants did not answer the question on the Nigerian government web-portal's accuracy and information sufficiency.

Table 96: **Orderly organisation of website content**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very satisfied	3	2.8	2.8	2.8
	Satisfied	38	35.2	35.2	38.0
	Neutral	24	22.2	22.2	60.2
	Dissatisfied	10	9.3	9.3	69.4
	Very dissatisfied	3	2.8	2.8	72.2
	Question skipped	20	18.5	18.5	90.7
	Response box unchecked	10	9.3	9.3	100.0
	Total	108	100.0	100.0	

Source: SPSS research data output

Evidence from the research data showed that 2.8% of the participants indicated that they are very satisfied with the Nigerian government web-portal's orderly organisation of website contents, while 35.2% also said they are satisfied with the Nigerian government web-portal's orderly organisation of website contents. 22.2% of the respondents said that they are neutral regarding the Nigerian government web-portal's orderly organisation of website contents, while 9.3% are dissatisfied with the Nigerian government web-portal's orderly organisation of website contents. 2.8% of the survey participants said they are very dissatisfied with the Nigerian government web-portal's orderly organisation of website contents, while twenty participants did not answer the question on the Nigerian government web-portal's orderly organisation of website contents.

Table 97: Website link functionality

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very satisfied	5	4.6	4.6	4.6
	Satisfied	22	20.4	20.4	25.0
	Neutral	28	25.9	25.9	50.9
	Dissatisfied	15	13.9	13.9	64.8
	Very dissatisfied	3	2.8	2.8	67.6
	Question skipped	22	20.4	20.4	88.0
	Response box unchecked	13	12.0	12.0	100.0
	Total	108	100.0	100.0	

Source: SPSS research data output

Research data showed that 4.6% of the participants indicated that they are very satisfied with the Nigerian government web-portal's link functionality, while 20.4% also said they are satisfied with the Nigerian government web-portal's link functionality. 25.9% of the respondents said that they are neutral regarding the Nigerian government web-portal's link functionality, while 13.9% are dissatisfied with the Nigerian government web-portal's link functionality. 2.8% of the survey participants said they are very dissatisfied with the Nigerian government web-portal's link functionality, while twenty-two participants did not answer the question on the Nigerian government web-portal's link functionality.

Table 98: **Consistency of website style**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very satisfied	5	4.6	4.6	4.6
	Satisfied	37	34.3	34.3	38.9
	Neutral	18	16.7	16.7	55.6
	Dissatisfied	11	10.2	10.2	65.7
	Very dissatisfied	2	1.9	1.9	67.6
	Question skipped	20	18.5	18.5	86.1
	Response box unchecked	15	13.9	13.9	100.0
	Total	108	100.0	100.0	

Source: SPSS research data output

Evidence from the research data showed that 4.6% of the participants indicated that they are very satisfied with the Nigerian government web-portal's consistency of website style, while 34.3% also said they are satisfied with the Nigerian government web-portal's consistency of website style. 16.7% of the respondents said that they are neutral regarding the Nigerian government web-portal's consistency of website style, while 10.2% are dissatisfied with the Nigerian government web-portal's consistency of website style. 1.9% of the survey participants said they are very dissatisfied with the Nigerian government web-portal's consistency of website style, while twenty participants did not answer the question on the Nigerian government web-portal's consistency of website style.

Table 99: **Timeliness of data and information**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very satisfied	5	4.6	4.6	4.6
	Satisfied	29	26.9	26.9	31.5
	Neutral	26	24.1	24.1	55.6
	Dissatisfied	14	13.0	13.0	68.5
	Very dissatisfied	4	3.7	3.7	72.2
	Question skipped	22	20.4	20.4	92.6
	Response box unchecked	8	7.4	7.4	100.0
	Total	108	100.0	100.0	

Source: SPSS research data output

Evidence from the research data showed that 4.6% of the participants indicated that they are very satisfied with the Nigerian government web-portal's timeliness of data and information, while 26.9% also said they are satisfied with the Nigerian government web-portal's timeliness of data and information. 24.1% of the respondents said that they are neutral regarding the Nigerian government web-portal's timeliness of data and information, while 13.0% said that they are dissatisfied with the Nigerian government web-portal's timeliness of data and information. 3.7% of the survey participants said they are very dissatisfied with the, Nigerian government web-portal's timeliness of data and information, while twenty-two participants did not answer the question on the Nigerian government web-portal's timeliness of data and information.

Table 100: **Multichannel online service delivery**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very satisfied	9	8.3	8.3	8.3
	Satisfied	29	26.9	26.9	35.2
	Neutral	20	18.5	18.5	53.7
	Dissatisfied	18	16.7	16.7	70.4
	Very dissatisfied	4	3.7	3.7	74.1
	Question skipped	20	18.5	18.5	92.6
	Response box unchecked	8	7.4	7.4	100.0
	Total	108	100.0	100.0	

Source: SPSS research data output

Survey results showed that 8.3% of the participants indicated that they are very satisfied with the Nigerian government web-portal's multichannel online service delivery, while 39.8% also said they are satisfied with the Nigerian government web-portal's clarity, readability, and appropriateness of text font and size. Nigerian government web-portal's multichannel online service delivery. 18.5% of the respondents said that they are neutral regarding the Nigerian government web-portal's multichannel online service delivery, while 16.7% are dissatisfied with the Nigerian government web-portal's multichannel online service delivery. 3.7% of the survey participants said they are very dissatisfied with the Nigerian government web-portal's multichannel online service delivery, while twenty participants did not answer the question on the Nigerian government web-portal's multichannel online service delivery.

Table 101: **Clarity, Readability, Appropriateness of text font and size**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very satisfied	4	3.7	3.7	3.7
	Satisfied	43	39.8	40.2	43.9
	Neutral	18	16.7	16.8	60.7
	Dissatisfied	7	6.5	6.5	67.3
	Very dissatisfied	3	2.8	2.8	70.1
	Question skipped	22	20.4	20.6	90.7
	Response box unchecked	10	9.3	9.3	100.0
	Total	107	99.1	100.0	
Missing	System	1	.9		
Total		108	100.0		

Source: SPSS research data output

Results showed that 3.7% of the participants indicated that they are very satisfied with the Nigerian government web-portal's clarity, readability, and appropriateness of text font and size, while 40.2% also said they are satisfied with the Nigerian government web-portal's clarity, readability, and appropriateness of text font and size. Nigerian government web-portal's multichannel online service delivery. 16.8% of the respondents said that they are neutral regarding the Nigerian government web-portal's clarity, readability, and appropriateness of text font and size, while 6.5% are dissatisfied with the Nigerian government web-portal's clarity, readability, and appropriateness of text font and size. 2.8% of the survey participants said they are very dissatisfied with the Nigerian government web-portal's clarity, readability, and appropriateness of text font and size, while twenty-two participants did not answer the question on the Nigerian government web-portal's clarity, readability, and appropriateness of text font and size.

Table 102: **Ease of navigation within and between websites**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very satisfied	5	4.6	4.7	4.7
	Satisfied	34	31.5	31.8	36.4
	Neutral	24	22.2	22.4	58.9
	Dissatisfied	8	7.4	7.5	66.4
	Very dissatisfied	2	1.9	1.9	68.2
	Question skipped	21	19.4	19.6	87.9
	Response box unchecked	13	12.0	12.1	100.0
	Total	107	99.1	100.0	
Missing	System	1	.9		
Total		108	100.0		

Source: SPSS research data output

Survey results showed that 4.6% of the participants indicated that they are very satisfied with the Nigerian government web-portal's ease of navigation within and between websites, while 31.8% also said they are satisfied with the Nigerian government web-portal's ease of navigation within and between websites. 22.4% of the respondents said that they are neutral regarding the Nigerian government web-portal's ease of navigation within and between websites, while 7.5% are dissatisfied with the Nigerian government web-portal's ease of navigation within and between websites. 1.9% of the survey participants said they are very dissatisfied with the Nigerian government web-portal's ease of navigation within and between websites, while twenty-one participants did not answer the question on the Nigerian government web-portal's ease of navigation within and between websites.

Table 103: **Website pleasantness and overall content presentation**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very satisfied	6	5.6	5.6	5.6
	Satisfied	33	30.6	30.8	36.4
	Neutral	26	24.1	24.3	60.7
	Dissatisfied	7	6.5	6.5	67.3
	Very dissatisfied	2	1.9	1.9	69.2
	Question skipped	22	20.4	20.6	89.7
	Response box unchecked	11	10.2	10.3	100.0
	Total	107	99.1	100.0	
Missing	System	1	.9		
Total		108	100.0		

Source: SPSS research data output

Evidence from the research data showed that 5.6% of the participants indicated that they are very satisfied with the Nigerian government web-portal's pleasantness and accessibility of overall content, while 30.8% also indicated they are satisfied with the Nigerian government web-portal's pleasantness and accessibility of overall content. 24.3% of the respondents said that they are neutral regarding the Nigerian government web-portal's pleasantness and accessibility of overall content, while 6.5% said that they are dissatisfied with the Nigerian government web-portal's pleasantness and accessibility of overall content. 1.9% of the survey participants said they are very dissatisfied with the Nigerian government web-portal's pleasantness and accessibility of overall content, while twenty-two of the research participants did not answer the question on the Nigerian government web-portal's pleasantness and accessibility of overall content.

5.11 CORRELATION OF SELECTED NETWORK PROCESS AND CROSS-AGENCY COLLABORATION VARIABLES

5.11.1 STATISTICAL CORRELATION

Statistical correlation is used to test relationships between categorical variables, and it is a way of measuring how things are related (Stephanie, 2018). By using a correlation coefficient (r), a value can be computed for the relationship between two variables. The correlation coefficient (r) has a value between -1 and +1. A "0" value means there is "no relationship" statistically speaking between the variables.

There are different types of correlation coefficients which are used in statistical testing. However, the choice of which to use depends on the type of data that is being analysed.

Parametric testing

The statistical testing method that makes distributional assumptions about the parameters of the population distribution from which data are drawn is known as parametric testing (Altman & Bland, 2009). Normally distributed data are a standard requirement for parametric testing together with large sample size. Parametric test methods include t-tests and analysis of variance used for group comparison. The importance of the assumptions in t-tests methods reduces as the sample size increases (Altman & Bland, 2009). Where the requirements to conduct a parametric test are fully satisfied, the researcher is encouraged to settle for such test as parametric tests are assumed to have more statistical power than non-parametric test, and it is more likely to detect more significant effect where one exists.

One-way Anova

The one-way analysis of variance (ANOVA) test is used to determine whether there exist any statistically significant differences between the means of two or more independent and unrelated groups (Lund & Lund, 2018). Six basic assumptions must be satisfied before ANOVA test can be used for statistical analysis of any research data.

Independent-sample t-test

t-Tests are used to determine whether a difference exists between the means of two independent groups on a continuous dependent variable. The t-test helps to determine

whether the difference between two groups is statistically significant (Lund & Lund, 2018).

Nonparametric testing

Non-parametric tests are mostly used to analyse data which fails to meet the distributional requirements of parametric methods (Altman & Bland, 2009). Skewed data are usually analysed using non-parametric testing methods. Parametric methods are often used to analyse scores with many values, whereas those with few values tend to be analysed using rank methods, although no distinct boundary exists between the two cases. Altman and Bland (2009) believe non-parametric estimates and confidence intervals though easier to find in t-tests, by satisfying additional assumptions, confidence intervals can be calculated in non-parametric test too. Although non-parametric methods are not as robust when compared to parametric methods, it can be useful for generating very strong views and to some degree provides estimates and confidence intervals and generalise to sufficiently simple analyses.

Goodman and Kruskal's Lamda coefficient

Goodman and Kruskal's Lambda coefficient is a test for association between nominal variables (Lund & Lund, 2018). It can be asymmetric where the requirement to specify the dependent variable is not necessary (Stephanie, 2018).

Mantel-Haenszel test of trend

This test is used for testing the linear association between two ordinal variables.

Pearson product-moment correlation

This test is also known as the Pearson correlation coefficient ® which is used to determine the strength and direction of a linear relationship that exists between two continuous variables (Lund & Lund, 2018).

Spearman's Rank-order correlation

This correlation calculates a coefficient which represents a measure of the strength and direction of the relationship between two continuous or ordinal variables (Lund & Lund, 2018).

Kendall's tau-b correlation coefficient

This is a non-parametric measure of strength and direction of association that exists between two variables measured on at least an ordinal scale. It can be considered as a nonparametric alternative to the Pearson correlation in the case where data being analysed has failed one or more of the assumptions required before testing is conducted. It can also be a useful alternative to Spearman's rank-order correlation (Lund & Lund, 2018).

Chi-Square test for association

This is a statistical testing technique to check whether two categorical variables are associated. Alternatively, to test whether two dichotomous variables are statistically independent. Chi-square testing does not distinguish between dependent and independent variables (Lund & Lund, 2018).

5.11.2 CHOICE OF STATISTICAL TEST

In deciding the choice of statistical test to use for this research, the researcher considered the research objectives, the sample size and the types of data collected.

The researcher decided to use Kendall's tau-b correlation – a non-parametric statistical method. The researcher's objective is to measure the strength and direction of the association between the variables of Networking process used in the research conceptual framework and not with the intention of pursuing complex statistical analyses of the research data.

The researcher is confident that the research data satisfied the statistical requirements for Kendall's tau-b method. An alternative test is Pearson product-moment correlation or the Spearman's rank correlation method. The strict requirement to meet the 'monotonic relationship' between test variables of both Pearson's and Spearman's correlations could not be sufficiently satisfied in this work, consequently, the choice of using Kendall's tau-b correlation coefficient sufficed as it does not stipulate nor require strict condition for 'monotonic relationship' between test variables.

Interpretation of correlation results (e-government supply-side)

The decision rule for assessing if Kendall's tau b correlation test is significant for $\alpha = 0.05$

If the P-value is ≤ 0.05, then the test is significant (there is a relationship between the two variables tested)

If P-value is > 0.05 then the test is not significant (there is no significant relationship between the two variables tested).

For correlation between Network partner selection (Resource availability) and Network incentive design (Persuasion).
Kendall's tau b test result shows that there is no significant relationship between Network partner selection (Resource availability) and Network incentive design (Persuasion), r=0.500, p=0.078.

For correlation between Network structure (Gradual introduction of change) and Internalisation of Network goals.
Kendall's tau b test result shows that there is no significant relationship between Network structure (Gradual introduction of change) and Internalisation of Network goals, r = -0.349, p= 0.223

For correlation between Network partner selection (Trust) and Network shared vision (co-operation).
Kendall's tau b test result shows that there is no significant relationship between Network partner selection (Trust) and Network shared vision (co-operation), r=- 0.343, p= 0.242

CROSS-AGENCY COLLABORATION (Variables correlation)

For correlation between Negotiation and Effective communication
Kendall's tau b test result shows that there is no significant relationship between Negation and Effective communication, r= 0.278, p= 0.323

For correlation between Co-operation and Consensus
Kendall's tau b test result shows that there is no significant relationship between co-operation and Consensus, r= - 0.220, p= 0.441

The correlation results above should be taken with some caution due to the very small sample size (N =12) used in this section of the research survey. A more reliable result would be obtained if the sample size was larger than 12.

Interpretation of correlation results (e-government demand-side)

The decision rule for assessing if Kendall's tau b correlation test is significant for α= 0.01

If the P-value is ≤ 0.01, then the test is significant (there is a relationship between the two variables tested)

If P-value is > 0.01 then the test is not significant (there is no significant relationship between the two variables tested).

For correlation between Internet connection cost satisfaction level and Internet quality of service satisfaction level.

Kendall's tau b test result shows that there is a moderate, positive and significant relationship between Internet connection cost satisfaction level and Internet quality of service satisfaction level, r = 0.334, p = .000

For correlation between Online privacy and Internet trust.

Kendall's tau b test result shows that there is a moderate, positive and significant relationship between online privacy and trust, r = 0.458, p = .000

For correlation between Appropriateness of customer interface and usability satisfaction level and Accuracy and information sufficiency satisfaction level.

Kendall's tau b test result shows that there is a strong, positive and significant relationship between appropriateness of customer interface and usability satisfaction level and accuracy and information sufficiency satisfaction level, r = 0.697, p = .000

For correlation between Appropriateness of customer interface and usability satisfaction level and Portal's clarity, readability, appropriateness of text font and size.

Kendall's tau b test result shows that there is a moderate, positive and significant relationship between appropriateness of customer interface and usability satisfaction level and portal's clarity, readability, appropriateness of text font and size, r = 0.551, p = .000

For correlation between Appropriateness of customer interface and usability satisfaction level Portal's link functionality.

Kendall's tau b test result shows that there is a moderate, positive and significant relationship between appropriateness of customer interface and usability satisfaction level and portal's link functionality, r = 0.554, p = .000

For correlation between Portal's link functionality and Portal's ease of navigation between websites

Kendall's tau b test result shows that there is a strong, positive and significant relationship between Portal's link functionality and Portal's ease of navigation between websites, r = 0.682, p = .000

The above correlation results show that the Nigerian government should pay adequate attention to how it designs and deploys its Internet portals. When designing government web portal attributes, the government should take into consideration citizens comfort, convenience and safety while using e-government portals in Nigeria.

5.12 REVISITING THE RESEARCH CONCEPTUAL FRAMEWORK

An understanding of the technological, organisational and environmental factors influencing E-government development in Nigeria thought important, are not sufficient elements to develop a sustainable framework which government can base its E-government policies. There are deeper E-government issues that goes beyond the TOE framework for E-government development. E-government development issues such as Network process, Cross-agency collaboration, and building interoperability frameworks for Government Information Networks are vital elements for development of consensual and sustainable E-government framework that is acceptable across all tiers of government and capable of delivering an integrated whole-of-government system. The whole-of-government system must strive to deliver information to the public in an efficient, effective, and timely manner. In developing e-governance system in Nigeria, conscious efforts must be made to explore how organisations could work together across boundary lines to deliver seamless public-sector services using web-enabled ICT applications through a unified government portal. Such E-government portal must connect seamlessly to multiple government Agencies in a whole-of-government approach.

To strengthen E-government frameworks in Nigeria, the researcher explored the additional elements of the Network process and Cross-agency collaboration within institutional arrangements. This research work identified the lack of Networking processes and cross-agency collaboration among public-sector organisations in Nigeria as significant limiting factors to the development of effective E-government programmes in Nigeria. Literature revealed that most of the public organisations in Nigeria operate in siloes with little or no collaboration across organisational boundary lines. The lack of Networking process and cross-agency collaboration among public institutions in Nigeria is a gap that has been identified to be lacking in previous E-government frameworks in Nigeria. To address this gap the researcher built on and extends previous E-government frameworks and models in Nigeria by integrating the assessment of technological, organisational, and environmental factors with elements of Network processes and cross-agency collaboration moderated by Stakeholders to develop a new E-government framework that is usable across public-sector organisations in Nigeria.

Reforming and changing public-sector organisations are by no means an easy task. It is a paradigm shift that requires governments to pursue innovative E-government programmes across all tiers of government and among wide range of community and democratic developments through open Networked governance patterns across multiple levels of government Agencies (U.N, 2008). In moving from infrastructure to service integration and then to transformation, a holistic framework of connected governance processes is required (U.N, 2008). The required linkages for this process are achievable through consensus on the various E-government elements such as the Network processes, Interoperability frameworks, and collaborative strategies that are adopted and agreed to by all E-government Stakeholders participating in the Networked arrangement.

The Nigeria government must place emphasis on developing institutional infrastructures that promotes and allows for linkages and collaboration between various government Ministries, Departments and Agencies. This type of governance architecture allows for institutional linkages and collaboration that activates transformational changes in public administration in an inclusive, coordinated and integrated manner.

A sustainable E-government strategy requires the government of Nigeria to review its current strategic national plans regarding E-government in such a way that includes public participation in every step of the E-government development processes. The E-

government national plan should be led from the top level of government and must be seen to encourage efficiency of service delivery, promote accountability and transparency, and encourage value co-production at every level of the E-government development process.

The Nigerian government must continue to recognise that the intrinsic value of E-government lies in its contributions and benefits for the citizens, and with this thought, government should work assiduously to ensure that E-government flourish in Nigeria. The sustainable development challenge of E-government in Nigeria is an issue of service integration across multiple organisations which must be confronted through a whole-of-government (WoG) approach by building linkages across multiple governmental organisations and promoting value co-creation among various socioeconomic and environmental activities in every sector of the economy.

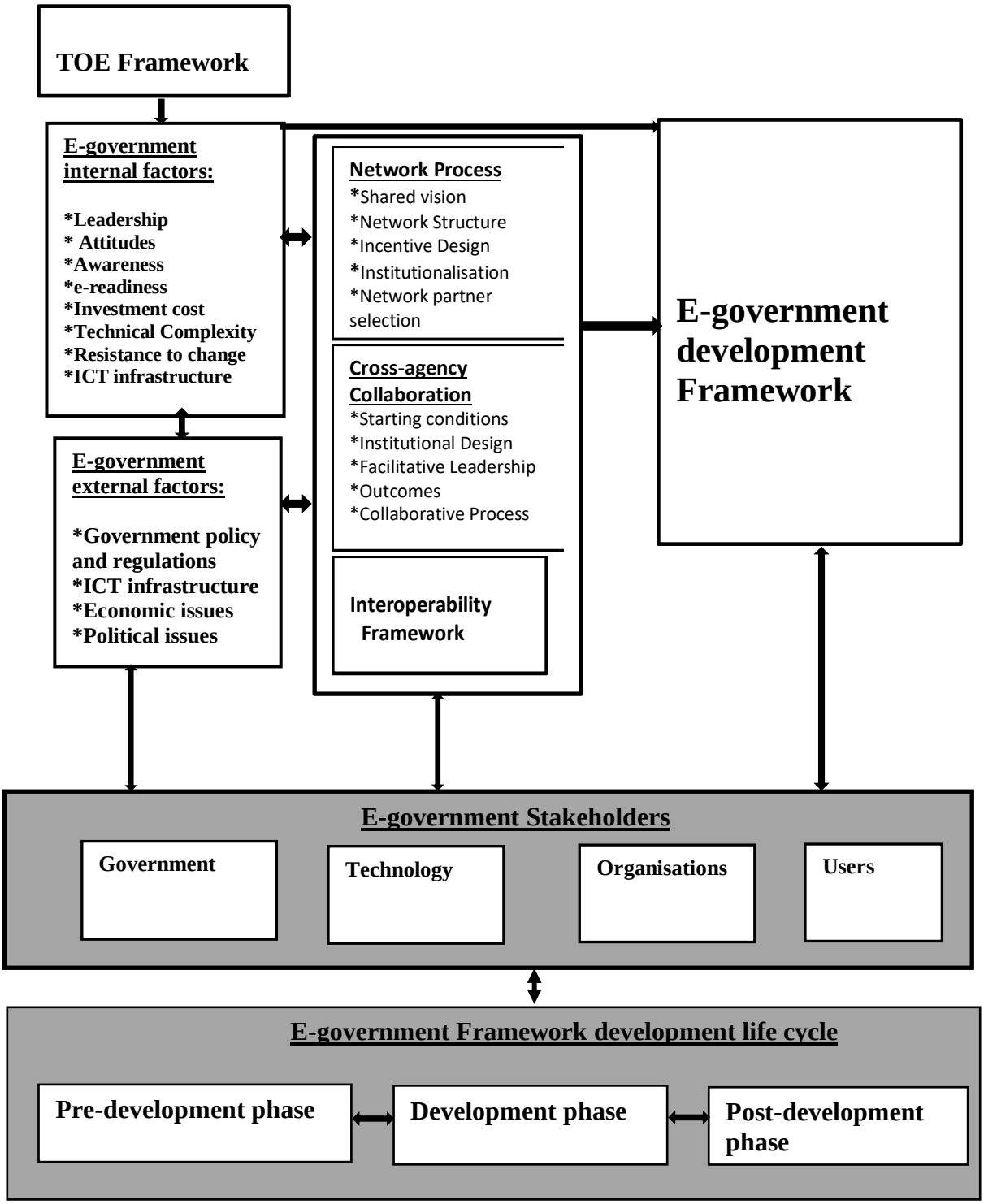
The new E-government framework incorporated empirical findings from this research. The new E-government framework presented below built on the limitations of previous E-government frameworks found in extant E-government literature relating to the Nigerian experience of E-government adoption and use. The novel framework provides a flexible, yet robust E-government framework which can be adapted to suit E-government projects both in Lagos State and across other regions in Nigeria and other developing economies around the world.

Variables from this research conceptual framework could be used by future E-government researchers to develop useful E-government theories that would advance E-government understanding and practice in Nigeria.

The focus on Lagos State government e-services initiatives in this study has enabled the researcher to produce a new E-government framework that can serve as a useful guide to the spread of E-government across other States and regions in Nigeria.

The new E-government framework's variables were derived from information gather from the literature review, research visits, and research survey instruments.

Figure 28: **E-government Development Framework (e-GovDev)**



Source: Factors facilitating and impeding E-government development in Lagos State of Nigeria, Research Author 2019.

Table 104: **Mapping of E-government factors to outcomes and recommendations**

E-GOVERNMENT FACTORS	OUTCOMES	RECOMMENDATIONS
STRATEGY	Lack of visionary leadership Lack of adequate action plan	Encourage government officials, Industry leaders, Senior management, and Chief information officers to explore the benefits of E-government with a view to setting up actionable plan to development and implement E-government
DATA AND INFORMATION	Issues relating to poor data and information access. Open government data (OGD)	Government are encouraged to facilitate open services through open engagement, open structures, open organisations, and open processes. This involves breaking down silos and improving cross-agency collaboration through data and resource sharing. Government should maintain a balance between centralisation and decentralisation alongside a top-down and bottom-up approach to governance. More investment to attract and retain skilled workforce knowledgeable in data science and analytics. OGD requires skilled data analyst

		who can make use of government data often presented in technical formats.
ICT INFRASTRUCTURE SKILLED WORKFORCE	Issues relating to poor ICT infrastructure Lack of technically skilled workforce. Poor and inadequate support services (Technical and non-technical)	Government is encouraged to invest more in both modern and up-to-date ICT infrastructure together with providing the required levels of technical training opportunities that would help develop needed skilled workforce.
ORGANISATIONAL FACTORS		
ORGANISATIONAL CULTURE	Lack of desire to share data and information between Agencies.	Public organisations are encouraged to "open-up" their data to other government Departments and be willing to collaborate with others across Agency boundaries.
HUMAN CAPACITY	Issues relating to lack of skilled manpower and training.	Governments and organisation should invest more funds in training and development programmes. Government and organisations should provide incentives to attract and retain knowledgeable workforce.
MANAGEMENT (LEADERSHIP)	Issues relating to lack of E-government awareness on the part of managers.	E-government enlightenment programmes should be organised for senior

	Lack of motivation and support by management. Issues relating to brain drain.	managers and organisation leaders. Organisation leaders should take the lead in promoting and adopting E-government and motivating others to follow suit. Skilled workforce should be recruited and given adequate remuneration and support to work for longer periods of time and help develop other staff members through mentorship programmes.
CHANGE MANAGEMENT	Bureaucratic tendencies and flexibility issues Business Process Re-engineering	Change should be introduced on a gradual basis with a flexible approach. Organisation leaders should encourage a Business Process Re-engineering that accommodates both the strategic vision of Management while at the same time protects employees' interest.
ENVIROMENTAL FACTORS		
ECONOMIC ENVIRONMENT	Issues relating to funding and investment in ICTs	Governments are encouraged to provide adequate funding interventions for E-government projects at all levels of government. The government should promote Public/Private Partnership as a means of

		collaborate and co-create public services that a valuable to the citizens.
POLITICAL ENVIRONMENT	Lack of political will and support Weak public institutions	Key government officials must be encouraged to key into E-government initiatives through awareness and enlightenment programmes. Public institutions must be strengthened by innovative practises that are built on ICTs which have the potential to improve relationship among government and the citizens.
LEGAL ENVIRONMENT	Issues relating to regulatory framework and policies.	Governments are encouraged to develop and implement consistent regulatory guidelines and policies that promotes, support, and protect E-government projects and initiatives in Nigeria.
COLLABORATION	Issues relating to e-governance and collaborative participation	Government is encouraged to think in terms of collaborative participation and value co-creation through joint development projects.
NETWORK PROCESS INTEROPERABILITY	Issues relating to: Shared Network vision, Network partner selection, Network	Government is encouraged to promote establishment of Government information

NETWORK POLICY FORMATION	structure, Incentive design, Institutionalisation of Network goals. Service development and interoperability framework. Network policy development Information sharing and integration.	Networks (GINs) across all tiers of government. Government is encouraged to adopt standardised interoperability framework that accommodate inputs from all E-government Stakeholders. Government is encouraged to fully engage E-government Stakeholders in policy and regulatory formation from the conceptualisation stage of E-government programmes to the delivery stage. Government must encourage joint service development process, and promote data and information sharing across organisation boundaries.

Source: Factors facilitating and impeding E-government development in Nigeria, Author.

5.13 CONCLUSION

The Nigerian government web portals referred to in this research survey encompasses all types of public-sector organisation websites. The survey captured the participants own experiences while interacting with government websites either at the federal, state, or local government levels. A brief analysis of the survey results indicated that Internet portal clarity, readability, and appropriateness of textual font and size scored the highest percentage of 40.2%. This finding is consistent with literature on the importance of public websites being readable and appropriate to material and presentation styles (West, 2003;

Al Bakr, 2009; Verdegem & Verleye, 2009). Also scoring relatively high points on the satisfaction scale were accuracy of data and information sufficiency which scored 35.2 % together with the orderly presentation of website content which also scored 35.2% on the satisfaction scale. The consistency of government website styles got 34.3 %. The survey outcome indicating the participants level of satisfaction with government's Internet websites showed a general pattern of large amount of neutral, dissatisfied and skipped questions which may be attributed to the participant's expressions of doubts regarding their rating of government's Internet portals. According to Zaidi and Qteishat, (2012), Information is the primary value that occurs because of exchange between two parties (the buyer and the seller) in an online environment. Therefore, to improve customer experiences and raise values, governments should develop Internet portals that incorporates best practises and takes into consideration the citizens views on what should be included in the contents of the public websites. In addition to deploying government websites, efforts should be made by all Stakeholders to adopt E-government good practise guidelines that allows for standardisation in approaches to how E-government projects are developed, implemented and managed across all tiers of government.

The research evidence from this study also clearly showed that a significant number of the senior managers surveyed in public-sector institutions in Lagos State of Nigeria are aware of E-government and are presently developing E-government strategies in their various Ministries. Many of them are embracing technologies and placing them at the core of public-service reform agenda. Many government Ministries and Departments in Lagos State are at the forefront in reengineering their business models and functions to allow the public greater access to wider range of public-sector services through e-services and multiple online delivery channels that are cost-effective and affordable (Choudrie et al., 2017). This is in agreement with literature that pointed to an increasing use of technologies by the governments around the world to improve their online e-service delivery to the general public in an efficient and cost-effective manner that can help to stimulate and improve relationship between the citizens and governments (Bertot et al., 2010; U.N, 2012, 2014; Axelsson et al., 2013; Ouml et al., 2014; Stefanovic et al., 2016).

Empirical evidence from this study has demonstrated that a significant number of senior public-sector managers (66.7%) are in support of using education and communication as a change approach strategy in their various Ministry. It would be recalled that a significant number of the participants also favoured the introduction of change that will benefit their

Ministries, albeit in a gradual manner. The gradual introduction of well-informed change will allow all Stakeholders ample time to understand the need for the change that is happening and allow them to adapt to the new ways of doing things in their respective Departments and Ministries.

Data and information gathered from the literature review and field survey were instrumental to the selection of the variables of the research conceptual framework.

CHAPTER 6

SUMMARY OF FINDINGS, DISCUSSIONS AND IMPLICATIONS

6.0 INTRODUCTION

Chapter six discussed the various opinions about the factors facilitating and impeding the development of E-government in Lagos State and across other States in Nigeria in line with the findings from the data analysis and objectives of this research work. The chapter highlighted the implications of the various factors that were investigated as to how they impact E-government development in Lagos State and how it could generalise across other states in Nigeria. The chapter concluded with a summary of the answers to the research questions together with a discussion on the achievement of the researched objectives.

6.1 OPINIONS ON FACTORS PROMOTING E-GOVERNMENT DEVELOPMENT IN LAGOS STATE AND ACROSS OTHER REGIONS IN NIGERIA

6.1.1 Opinions on Improved accountability and transparency

The survey results showed that seventy-five percent (75%) of the senior government officials interviewed in their various Ministries agreed that improved accountability and transparency is a very important benefit of E-government. Furthermore, 16.7 % of the senior managers also agreed that accountability and transparency is an important consideration that needs to be factored into the development and use of E-government projects and programmes in their various organisations. Ninety-one-point six percent (91.6%) of the senior managers interviewed agree that implementing E-government programmes in their various Ministries will have a positive and significant impact on reducing financial corruption and promoting transparency in their various Departments and Ministries. This finding is consistent with the submission of Diga *et al.*, who stated that “a traditional, modernist perspective seeks to ensure that ICT resources are readily available to promote efficient national development and participation by improving accessibility to public administration for citizens, bringing transparency to government processes” (2013, p.122). The views of Diga et al., resonates with the opinion of one of

the research participants (a director at the Lagos State Ministry of Science and Technology) who said "…we try to create an enabling environment within the system here…we are encouraging IT companies involved in Internet services to partner with us in providing Internet access to complement our effort. We have waived all the right of way for them to dig fibre around the state, we also encourage co-habiting, instead of everyone building masts in the state". The director further stated that the system they are building in Lagos State allows the public to interact with the Lagos State government using a computer software package known as the 'Citizen relationship management system'. The director said that the citizen relationship management system has feedback features that could help government identify areas of public need that could be improved. He also mentioned that the CRM system could handle short messaging service (SMS service) and e-mails twenty-four hours daily. Talking about transparency, the director of Lagos State Computer centre said that "if you are not transparent, you cannot come and attempt E-government". He stated that a lot depends on the chief executives of the States to promote E-government in Nigeria. He stated that for E-government to succeed in Nigeria, the chief executives of each state and the federal government must have a clear vision and clear mission- setting the right priorities.

Improved accountability and transparency on the part of the Lagos state government and across other regions in Nigerian would have a positive impact on E-government development, promoting trust and encouraging inclusiveness that fosters community cohesion in public-sector organisations in Nigeria.

6.1.2 Opinions on Improving Network and community cohesion

The results from questionnaire survey and interviews indicated that ninety-one-point-seven percent (91.7%) of the participants agreed that implementing E-government initiatives will have either a significant or very significant impact in improving community and Network cohesion between various government Departments and Ministries within public-sector institutions in lagos state. This finding agrees with E-government literatures which suggested that E-government initiatives are capable of enhancing citizen-to-citizen interaction using Network facilities thereby improving community cohesion by providing opportunities for people with similar interest who although may be separated geographically to come together in an online forum or chat room to engage and share information with one another (Seifert, 2003; Undesa, 2008;

Guillamón et al., 2016). This sorts of online interaction and information sharing enables government to interact freely and seamlessly with the citizens, taking feedback from the public discussion online forums and using such feedbacks to develop people-oriented projects that benefits the community.

6.1.3 Opinions on Reduced overall cost of running an organisation

The survey from this research work revealed that forty-one-point seven percent (41.7%) of the senior officials and information managers surveyed agreed that a reduction in the cost of running their Ministries is a very important consideration for developing and implementing E-government services. An additional twenty-five percent (25%) of the senior managers that participated in the survey also agreed that implementing E-government is an important factor to reducing the cost of running their various Departments.

E-government practice often entails centralisation and standardisation of information systems among government Agencies. A direct impact of such centralisation is an expected cost reduction on the operation as collaborating Agencies tends to share databases and information across their organisation's boundaries (Yang et al., 2014; Gil-Garcia & Sayogo, 2016). The reduction in overall cost of running government by developing and implementing E-government practises across all tiers of government will allow the government to channel public funds to other vital national or community projects that would have otherwise not been possible due to limited financial resources. An example of how Lagos State is reducing cost of Internet services to public institutions according to the Director of Lagos State Computer centre, is by encouraging a win-win partnership strategy with Internet service providers in Lagos state. By giving them waivers on the right-of-way to lay fibre optic cables around Lagos State in exchange for the Internet Service Provider's companies installing fibre optic cables in government schools and parastatals within Lagos State.

Other State governments in Nigeria can adopt the Lagos state model of promoting a win-win situation where consensus is required to promote public-private-partnership that enhances E-government development.

6.1.4 Opinions on Promoting the use of ICT within an organisation and the public

The survey results showed that fifty percent (50%) of the senior government officials interviewed agreed that developing and implementing E-government programmes is a very import avenue to promote the use of ICTs both within public-sector services and among the public. A further forty-one-point seven percent (41.7%) also agreed that E-government initiates will help to promote the use of ICTs in the various Departments.

The relatively large percentage (50%) of senior managers who agreed that E-government has the potential to promote the use of ICTs within organisations and to foster improved relationship with the public through web-enable technological devices is in tandem with E-government literature which suggested that Information technology (IT) systems enable the internal workings of government to function effectively through automation, while Information Communication Technologies(ICTs) systems support and transforms external workings of government by processing and communicating data and information quickly and in a more effective manner (Lee, 2010; Nam, 2014). The timely processing of data and information would allow the Nigerian government to function effectively and deliver useful public services on time. Another benefit of deploying E-government in public-sector organisations is captured in the transformative and innovative powers of ICT to provide digital solutions to various economic and societal demands of the citizens. Information Technology has many applications within the society which can be employed as a driver and enabler of change and reformation by governments wishing to be innovative in its approach to governance (Luna-Reyes & Gil-Garcia, 2014). IT and ICTs are useful tools for reforming and strengthening weaknesses in the public-sector services by leveraging the powers of ITs and ICTs to bring about government reforms and transformations through improved service quality and efficiency in service delivery (Zhang et al., 2014; Janowski, 2015; OECD, 2017). This study suggests that the Lagos State government and other State and Federal arms of government should invest more in the use of ITs and ICTs to help develop E-government programmes across public institutions in Nigeria.

6.2 OPINIONS ON FACTORS IMPEDING E-GOVERNMENT DEVELOPMENT IN LAGOS STATE AND ACROSS OTHER REGIONS IN NIGERIA

6.2.1 Opinions on E-government awareness issues

E-government awareness in the context of this research survey refers to the extent to which employees of the selected Ministries were aware of the term 'E-government' and whether they are aware of the development and implementation of E-government strategies and initiatives within their various Departments and Ministries. The analysis of the survey questionnaires carried out during this research work revealed that out of the one hundred and eight (108) research participants that responded to the survey questionnaire, sixty-two (57.4%) indicated that they are aware of the E-government programmes and strategies their various Ministries and Departments have put in place to develop and implement E-government projects. The figure suggests that more needs to be done in the areas of E-government sensitisation programmes given that only 25% of the senior managers surveyed suggested that their Departments has E-government sensitisation plans in place. 16.7% of the senior managers surveyed indicated that their Ministries are currently engaging in E-government sensitisation programmes. This research revealed that 41.7% of the senior managers agreed that their Departments are already making extensive use of ICTs to improve their work processes. Fifty-seven-point four percent (57.4%) of the employees of Lagos State Secretariat surveyed in their various Ministries indicated that they are aware of E-government programmes in their respective organisations. The low awareness of E-government services in many public-sector organisations in Lagos State has an adverse effect on E-government development in the state and across other regions in Nigeria.

The comparatively low figures on E-government awareness obtained from this study suggests that the Lagos State government would need to improve on its current E-government awareness strategies so that more of their employees would benefit from using E-government services that have already been put in place by the government. Efforts could be made by government Agencies across public-sector organisations in Lagos State, and by extension in Nigeria to set up public awareness programmes to educate the masses on the benefits and importance of adopting and using E-government systems.

6.2.2 Opinions on high-level of investment cost to participate in E-government

The survey results confirmed that the issue of inadequate funding of Ministries and Agencies in Lagos State has led to public organisations prioritising their resources. Fifty-eight-point three percent (58.3%) of the public-sector managers interviewed agreed that investment cost to participate in E-government is an important issue to them, while a further twenty-five percent (25%) of the senior managers said E-government cost implications are serious and a very important consideration for them when managing their limited financial resources. Many of the managers stated that they operate their Departments on insufficient financial resources, and at present does not find implementing E-government projects an attractive proposition until their financial circumstances improve substantially.

Many of the senior government officials interviewed alluded to the prohibitive cost of setting up and running high-tech ICT infrastructures that are required to operate an effective E-government system. Majority of the interview participants stated that inadequate funding is a significant factor that impedes the uptake of E-government projects in their respective Ministries. Many of them said they operated on very limited budgets that are often prioritised for essential services of their Departments. E-government Literature also confirmed that the high cost of ICT infrastructure has been a significant factor limiting the development and implementation of E-government programmes in countries that are not well-off financially (Ndou, 2004; Mundy & Musa, 2010; Adeyemo, 2011; Dhamodharam & Saminathan, 2011; Guha & Chakrabarti, 2014; Zhang *et al.*, 2014). One can argue that if E-government is to be developed and used in the process of governance in Nigeria, there is a need for extra funding for government MDAs by the government to specifically address E-government projects in public institutions. In a situation where the push for the use of ICTs in public-sector organisations is not taken seriously by the federal and state governments, it would be difficult to make the case for E-government and consequently more difficult to argue for allocation of more resources to assist in developing and implementing E-government systems in Nigeria.

A possible solution for the Lagos State government and other state governments in Nigeria is to explore joint ventures or partnerships with foreign collaborators and private investors to participate in the financing technical infrastructure that the country needs to develop a robust E-government system that meets international standards.

6.2.3 Opinions on Lack of adequate government policy and legislative support

Evidence from this research survey indicated that high-level government officials recognised the need for consistent government policies and legislation to help drive E-government development. Fifty-eight-point three (58.3%) of senior managers surveyed agreed that it is crucial for policymakers to set the strategic vision of government as it relates to E-government initiatives in the public-sector organisation. This argument by senior managers surveyed is consistent with E-government literature and previous research studies that suggested the importance of government intervention through ICT policy initiatives (Bernhard, 2014; Jin & Cho, 2015; Koussouris *et al.*, 2015; Klievink *et al.*, 2016). The ultimate challenge for the Nigerian government is to ensure more integrated policy-making that considers inter-linkages among the various aspects of IT and ICT policies that are already in existence in the country. Some of the senior information officials surveyed were neutral about government setting ICT policies for government Agencies. In their opinions, such interventions on the part of government will be politically motivated and not be in the overall interest of the public-sector organisations nor in the citizen's interests. Having said this, the point must be made that to effectively move E-government development forward in Nigeria, government policies have a huge role to play. To understand this role, policymaking can be broken down and viewed from multiple perspectives or sub-stages that come together to form a policy cycle. The different phases of the ICT policy cycle begin with agenda setting (i.e., consideration of the issues that require government attention). Once these issues are identified and categorised, the next phase is the policy formulation phase (i.e. consideration of the various options and strategies required to address the issues that were previously identified). The policy formulation phase leads to the decision-making phase (i.e. prescribing through negotiated agreed course of action). The policy implementation phase allows for the translation into action the selected and agreed approach by all E-government actors. The policy cycle is completed when policy outcomes are monitored and evaluated in the policy monitoring and evaluation phase, which may eventually lead to new policies that must pass through the policy cycle.

A paradigm-shift from a bureaucratic mode of governance to a newer model built around ICTs present unique challenges and opportunities for public-sector leadership. To achieve the desired outcome in ICT-use for effective public service that benefits the citizens, certain conditions must be met. As noted by Heeks, “a critical pre-condition in successful e-governance for development is an e-champion or small group of e-champions- leaders

with vision who put E-governance onto the agenda and make it happen" (2001, p.18). "E-champions" must be catalyst or enablers of reforms within their various organisations and must lead from the front; providing needed ICT related information and support for their organisations. Although there is an apparent recognition of other economic, social, and political factors affecting adoption and use of ICTs in government, policymakers still find it hard to "translate these nuanced concepts into practical policy interventions" (Diga et al., 2013, p.114). Since E-government initiatives are complex and expensive ventures, concerted and deliberate efforts on the part of the Nigerian government should be put in place in forms of policies and legislative support that guide and direct organisations and public institutions on how best to develop and maintain their E-government programmes in line with the overall strategic vision of the government as it relates to E-government initiatives aimed at promoting economic growth, inclusive governance, and enhancing relationship between government, citizens, and businesses. When the government and other E-government Stakeholders pull together to fashion out a unified and consistent policy guideline to support both the development and implementation processes of E-government in Nigeria, the chances of successfully deploying an effective form of E-government system would be higher and in turn lead to reduced E-government project failures in Nigeria.

The extent to which government formulates and abide by ICT policies and regulations that conforms to global best practise will determine the extent to which E-government will develop and thrive in Nigeria. Today, the picture of E-government in Lagos state and across other regions in Nigeria is hazy, with very little semblance to the practise of E-government in western developed countries.

6.2.4 Opinions on resistance to change among organisation Departments

The survey results showed that senior managers and heads of Departments see resistance to change among organisational Departments as a serious factor militating against E-government implementation within their organisation. 66.7% of the respondents to the survey agreed that resistance to change is an important and essential factor that must be considered when changing how organisations operate. In discussing the issue of resistance to change within an organisation, 25% of those surveyed agreed that resistance to change is a very important factor which they must be addressed before any meaningful change can occur in any organisation.

Resistance to change among organisation Departments could be traceable to fear on the part of employees and of public-sector organisation leaders (Savoldelli et al., 2014). Literature suggested that resistance to change and innovation undermines the robustness of government, and could interfere with entrenched bureaucratic culture of an organisation (Meijer and Bekkers, 2015) where the preference is to reinforce existing structures of entrenched power and control to the detriment of any transformation agenda of external sources (Tassabehji et al., 2016).

The reasons for resisting changes could vary from organisation to organisation. During the research, the respondents were asked in specific terms what their fears or worries were about using ICTs to enhance effective service delivery within their various organisations. Many of those surveyed mentioned that the sustainability of adopting newer information systems that could require among other things constant upgrading of IT facilities and retraining of their workforce would have financial implications which their various organisations can simply not afford due to their limited budgets. Situation such as this calls for careful planning and advance preparations where organisations would have to set out and align their reformation agendas alongside their mechanisms for change; which in this case would be ICT infrastructure and support services.

This research finding supports views from E-government literature on the importance of change management in organisational settings (Gupta *et al*., 2008; Mergel and Desouza, 2013; Millard, 2013; Larsson and Grönlund, 2016). The process by which change is introduced within an organisation will determine the extent to which it is either accepted or resisted by the employees of the organisation (Ansell & Gash, 2008; Guha and Chakrabarti, 2014). The implication of a carefully managed change from a bureaucratic system of governance to an E-government system in Nigeria will result in employees of public-sector organisations willing to accept newer and innovative ways of working (Choudrie *et al.*, 2017).

6.2.5 Opinions on complexity in understanding ICT systems and Management technical ability

Technical competency revolves around the technical readiness of an organisation in its efforts to adopt and use E-government systems. Technical competencies amongst other things includes how technically knowledgeable the organisation is, together with the availability of skilled manpower and its ability to operate hardware and programmes

needed to run an E-government system (Ebrahim and Irani, 2005; Tseng et al., 2008; Mutula and Mostert, 2010; Manoharan, 2012; Asogwa, 2013). An integral part of E-government is the provisioning and use of ICT infrastructure that is capable of meeting the increasing complexity of public e-services (Lindgren and Jansson, 2013) which are fundamental to E-government initiatives. E-government literature points to the lack of adequate technical skill and management know-how that is required to administer E-government systems as a major contributor to failures of E-government projects (Helbig et al., 2009; Lean *et al.*, 2009; Gil-Garcia, 2012; Karokola, 2012; Angeles, 2014b; Janowski, 2015).

Results from this research work indicated that 41.7% of senior information officers interviewed agreed that complexity of E-government systems and the lack of adequate skilled workforce coupled with low technical ability on the part of management is very important factor impeding the growth of E-government in their various Ministries, Departments and Agencies. A further 25% of the participants also agreed that E-government complexity and unskilled management hampers E-government development in Nigeria.

Technical complexities related to E-government design-reality gaps have also been highlighted in literature as inimical to E-government development and implementation in Nigeria. Instances where the sociocultural and economic realities of a country alongside its technical competence is not carefully factored into E-government projects, the resultant effect might lead to unintended consequences or a total failure of the E-government project (Schuppan, 2009). The design-reality gap is a plausible reason why many public web portals visited during this research were wholly dysfunctional and not fit for the purpose for which they were designed for. Many of the government websites in Nigeria were content analysis were carried out lacked essential features that characterises a functional system that can meet the needs of the public in terms of a whole-of-government service delivery.

For E-government to succeed in Nigeria, the government must do more in terms of encouraging capacity-building programmes for both the citizens and government personnel through deliberate efforts of sponsoring training programmes targeted at those who would operate the various technologies needed to develop and implement E-government projects across all tiers of government. Mundy and Musa observed that the knowledge of the existence, and benefits of E-government would be of little use to the people if they cannot use IT equipment (Mundy & Musa 2010). They also noted the importance of education of the citizens to ensure that everyone is carried along in the

process of e-governance. The importance of incorporating IT education and E-government studies into the national education curriculum would also serve to sensitise the public right from school age to the time they are ready for the labour market about the importance and role of ICTs in everyday activities.

Senior management officials that were interviewed suggested that Departmental leaders should do more to acquire relevant E-government skills or send employees on manpower development training schemes that would improve their skillset and equip them with the needed skills to engage in E-government projects.

This study showed that lack of adequately skilled workforce and low management technical ability on the part of public-sector management is a contributory factor impeding the growth of E-government in the public-sector organisation in Lagos State, and by extension to other public-sector organisations in Nigeria.

6.2.6 Opinions on E-readiness issues

The research survey results indicated that 50% of the senior public officials that participated in the research agreed that E-readiness is very important in the process of E-government development in Nigeria. 33.3% also agree that E-readiness is an import issue to be considered for the development and implementation of E-government systems in their respective Departments.

E-readiness refers in some sense to the availability of requisite technological infrastructures, legal frameworks, institutional and human resources and the political will to use ICTs to promote good governance or promote a nation's economic, social and political interests (Albert, 2009). According to the United Nations, E-government readiness is a factor which includes not just a country's state of readiness in terms of its technological and telecommunication infrastructure, but also a readiness in the level of its human resource development among many other factors (U.N, 2005).

E-readiness issues have been well-documented in literature and discussed in chapter two of this research work. E-readiness in the context of ICT-enabled E-government in developing countries covers an array of problems ranging from literacy levels of the citizens and availability of ICT infrastructure, to issues of affordable computing gadgets and accessibility to Internet connectivity. According to a recent U.N. E-government report, "E-participation is expanding all over the world. With growing access to social media, an increasing number of countries now proactively using Networking

opportunities to engage with people and evolve towards participatory decision-making" (2016, p.3). Mundy and Musa explained that apart from issues bordering on infrastructure, E-readiness "involves having the necessary legal and regulatory framework available to support E-government and ensuring positive end-user perspectives towards E-government" (2010, p.148). In addition to public ICT capacity building and regulatory framework development, for E-government to thrive and succeed, governments as the supply-side entity need to actively use digital technologies to engage the citizens and likewise encourage the citizens (demand side) to do the same (Albert, 2009).

E-government researchers have expressed the importance of E-readiness for effective E-government development by any country or organisation that wish to make use of ICTs and the Internet to deliver public e-services (Schuppan 2009; Mundy & Musa 2010; Fatile 2014, Undesa 2005, 2008, 2012, 2014).

The Nigerian government must continue to improve E-readiness in terms of skilled workforce development, telecommunication infrastructure development, and greater penetration of the Internet nationwide. The use of ICTs to engage the public should be encouraged and facilitated at all level of government. There is no doubt that E-readiness must be accompanied by a willingness on the part of government, not only to take advantage of the various opportunities that newer forms of technological innovations are making possible, but to leverage on existing ICTs to enhance both the internal and external workings of government. Government strategies need to address both formal and informal approaches to citizen readiness and engagement. To increase the chances of success for E-readiness and e-participation strategies, governments can key into existing communication platforms and channels that are already in use by the citizens such as mobile telephony instead of developing new ones which might be costly and time-consuming.

Improving citizen E-participation through effective E-readiness programmes has the capacity to move public-sector organisations closer to the public and thereby improve the quality of life for the citizens through easier access to important public services.

6.2.7 Opinions on lack of accountability and transparency

A very large percentage (over 90%) of the respondents believed that accountability and transparency issues are important factors capable of promoting the development of E-government in Nigeria. This finding is consistent with the United Nations arguments and those of notable E-government researchers who had expressed the need for governments to be more accountable and transparent in their efforts to promote good governance through the adoption of ICT in public-sector organisations (Bertot, Jaeger and Grimes, 2010; U.N, 2012; Ojo, Janowski and Awotwi, 2013; Harrison and Sayogo, 2014; Al-Hujran et al., 2015; Linders, Liao and Wang, 2015).

The perception of many of those interviewed and the survey respondents is that the Nigerian public-sector organisation as it currently stands is very corrupt and lacks any form of transparency and accountability. Although having noted the lack of transparency and the endemic corruption among public officials in the public-sector organisation in Nigeria, some of the respondents were confident that the country is gradually moving in the right direction with the government's introduction of a single treasury account known as TSA and the strengthening of the anti-corruption bills have enabled the government to tackle issues of corruption in the public-sector.

6.2.8 Opinions on Online Security issues

Fifty percent (50%) of the senior managers interviewed said information security issues is a very significant consideration when considering E-government projects. A further 25% of them also agreed that issues of identity and data theft are significant issues that their Department considers when deciding on E-government projects. Regarding the issues of surveillance and data misuse, 58.3% of the senior managers agreed that that privacy is a significant issue and that lack of online information privacy is preventing more people from engaging in online transactions with government websites. 16.7% of the respondents also agreed that online privacy is a very important factor that must be carefully considered when implementing E-government projects.

The result agrees with literature which discussed online security and privacy issues as part of the barriers facing e-services technology in emerging economies around the world. The security issues associated with E-payment system in Nigeria have contributed to low adoption of e-Service (Oseni et al., 2015).

Data Security is a highly important issue that affect authority's decision to share information electronically due to the importance of, and responsibility of the government to keep private data entrusted in their care both confidential and secure. When organisations share and integrate large amounts of data from different organisations scattered across wide geographical locations using all sorts of technological platforms, the action poses security challenges regarding safety, privacy and security of the data involved in the process. The safety of data is important not just for improving work efficiency and information flow across multiple organisational boundary lines, but also for building confidence and trust among the various organisations involved in the sharing and use of such data (Bigdeli *et al.*, 2013; Ojo *et al.*, 2013).

According to the OECD, "Governments that manage data as an asset help to mitigate the inherent privacy and security risks that come with expanding human-machine interactions" (2017, p.21). The OECD (2017) believes when data is properly managed through good data governance policies, they are more likely to be easily discovered, exploited and shared within and between government organisations and with the public through Internet portals that are dedicated to the purpose of information sharing.

The Nigerian government could do more in the aspect of not only enacting laws and providing regulatory frameworks to govern the use of private data online, but also to create and monitor enforcement units that sees to it that everyone wishing to access and use private data online, should comply with the laws governing data access, use, and storage. By so doing, the citizen's confidence and trust in government web portals would be secured.

6.3 OPINIONS ON FACTORS IMPEDING E-GOVERNMENT DEVELOPMENT IN NIGERIA: NETWORK PROCESS

6.3.1 Opinions on the Network process

The researcher believes that considerable attention has not been given to issues of cross-agency collaboration and Network development processes. Literature showed that effective E-government projects should take seriously the issues bordering on cross-agency collaboration (Ansell & Gash, 2008; Bigdeli et al., 2013; Gil-Garcia & Sayogo, 2016b; Ku et al.,2016; Olumoye& Govender, 2018) and Network development processes (O'Toole, 1997; Yang *et al.*, 2012; Guha & Chakrabarti, 2014) which are critical

considerations when considering E-government initiatives in the public-sector organisations. It is in view of these additional constructs; the researcher has chosen to extend the existing E-government frameworks in Nigeria by including cross-agency collaboration and Networking process as necessary conditions needed to improve the development of E-government projects in Nigeria. The impacts of Networking process and cross-agency collaboration towards an effective E-government development programme in Nigeria is discussed below.

6.3.2 Opinions on Shared Network vision

The survey result showed that 41.7% of the respondents agreed that negotiation is an important consideration within a shared Network vision. With a further 33.3% of those interviewed agreed that negotiation is very important in a shared Network arrangement. 75% of the respondents indicated that for a shared vision, consensus is an important consideration, while 66.7% of the senior managers interviewed said that effective communication is very important when considering a shared vision for the Network. 50% of the senior managers interviewed agreed that once a shared vision has been agreed by all actors within a Network, collaboration is a very important step that must be taken seriously by all actors within the Network.

A shared vision of the goals and objectives that are desirable to all Stakeholders intending to take part in a Networked form of governance should be clearly defined at the very beginning of the discussions to embark on E-government projects (Guha & Chakrabarti, 2014). Potential Network actors in all government establishment in Nigeria should engage each other in constant and deliberate discussions in other to articulate the goals and objectives of all the potential Network partners to arrive at a shared vision that is consensual and agreeable to all partners that have agreed to participate in a Networked arrangement. This view is corroborated by Kickert et al., (1997) whom believed interaction results in the articulation of the goals and objectives of all partners and a gradual arrival at a consensus about the goals of the Network and roles of individual actors. The roles and duties of each Network actors should be clearly set out at the beginning of the Network formation once suitable Network partners have been identified.

6.3.3 Opinions on Network partner selection

The research results indicated that ninety-one-point seven percent (91.7%) of the managers interviewed agreed that the 'reputation' of Network partners is either very import or important consideration in selecting partners that would take part in the Network. Fifty percent (50%) of the senior managers interviewed agreed that 'resource availability' and 'Network harmony' are very important elements that needs to be considered carefully when selecting Network partners. Fifty-eight-point three percent (58.3%) of the managers surveyed argued that 'Trust' is an important factor that must be considered when selecting Network partners. Forty-one-point seven (41.7%) percent of the managers went further by saying that issues relating to 'trust' is not only an import consideration, but a very important factor that needs to be addressed when selecting Network partners. This finding agrees with E-government literature which pointed to the importance of a careful selection of partners in the Network formation process. Agranoff and McGuire (1999) suggested that the first step in the formation of a Network is the identification of the actors or participants within the Network that will play critical roles and confirms their willingness to participate in the Network arrangement. Kickert & Koppenjan (1997) believe it is important to select the right set of actors at the beginning of a Network arrangement because the exclusion of a critical actor may close the door for future inclusion. According to Agranoff and McGuire (1999), the two most important factors that must be considered in selection of partners are: a) Resource dependence criterion and b) harmony of interest criterion.

6.3.4 Opinions on Network Structure

In selecting a structure for the Network, it is important to understand the intricacies involved in developing a successful Network such as creating Network goals and objectives, selection of actors and facilitating interaction between them, conflict of interest management between Network actors, creating trust-building institutions, and institutionalising Network goals and objectives. All these issues require a very careful and delicate balancing of strategies and techniques especially when organisations are going through changes. The research result indicated that fifty-eight-point three (58.3%) of the senior managers interviewed believe 'gradual introduction of change' is very important when organisations are undergoing change. An additional 33.3% said introducing change in a gradual manner is important if a desirable outcome is to be achieved. Fifty percent (50%) of those interviewed agreed that 'negotiated change' is an

important consideration, while seventy-five percent (75%) of the senior managers interviewed agreed that 'mutually supportive change' is an important process in a Network structure. Fifty-eight-point three percent (58.3%) of the research respondents believed 'continuous change' is very important for any organisation. It should be noted that changing or altering the existing structure of the Network by introducing additional actors or the removal of non-compliant actors have the tendency to cause disruptions in the activities of the Network. Although changes may become necessary at times, the suggestion is that "such changes should be brought about in a gradual manner so that the Network gets sufficient time to absorb the changes" (Kickert & Koppenjan, 1997, p. 51). Public-sector leaders in Nigeria are encouraged to continually evaluate their E-government strategies and introduce the required changes in a gradual manner. The concept of change management is not new to 75% of the senior public officers that were interviewed for this research work. This is an indication that implementing new and innovative ways of working would not be difficult for organisation leaders across public-sector establishment in Nigeria if the Lagos State trend is replicable across public institutions in Nigeria.

6.3.5 Opinions on Network incentives

The incentive to either participate or withdraw from a Network alliance. It is essential to understand that participation in the Network is voluntary. Therefore, the incentives that Stakeholders must either engage or disengage in collaborative governance and the factors that shape those incentives must be given prime consideration if the Network wants to attract and retain members (Ansell & Gash 2008). The desire to participate are generally low if Stakeholders feel they can achieve their goals unilaterally or when there exist better alternatives elsewhere. The differences that exists among the Network actors imply that different approaches are needed to control the behaviour of Network actors (Meuleman, 2008). The differences existing among Network actors calls for a flexible approach when designing incentives for the Network to ensure that the interests of each participating actor is taken care of (Saito, 2008). Forty-one-point seven percent (41.7%) of the senior managers interviewed considered that 'penalties' are either very important or important elements that should be used to control the behaviour of Network participants. Fifty-eight-point three (58.3%) of the managers interviewed agreed that using 'persuasions' is an important element to incentivise Network participants. The same percentage (58.3%) of research participant equally agreed that issuing 'Contracts' to Network participants is

an important incentive that must be considered within a Network arrangement. Thirty-three point- three percent (33.3%) of the senior managers interviewed however favoured using some form of 'coercion' to control the behaviour of the Network actors. This finding is in line with literature which suggested that a judicious mixture of methods like incentives, contracts, penalties, and persuasion needs to be used as per the demands of the situation (Meuleman, 2008). And that incentives to take part in collaborative governance process would be stronger if Stakeholders believe that the achievement of their individual goals would largely dependent on cooperation from other Stakeholders (Logsdon 1991).

6.3.6 Opinions on Internalisation of Network goals

In other for a Network to have a lasting impact, the goals and objectives of the various member in the Network must be collectively shared and agreed by individuals representing the various organisations with a view to institutionalising the goals and objectives of the Network within their parent organisations (Kickert & Koppenjan 1997). The results from this research survey indicated that eighty-three-point three percent (83.3%) of the senior managers surveyed agreed that internalisation of the Network goals is an important consideration for the success of any Network arrangement. This finding is consistent with E-government literature on the need for institutionalisation of Network goals that suggested that without proper internalisation of Network goals within the parent organisations, the agreed Network goals become vulnerable to changes by individuals involved in the Network process (Kickert and Koppenjan, 1997; Guha and Chakrabarti, 2014). It should be noted however that institutionalisation of the Network goals is not an easy process to achieve due existence of some strong institutions that might make up the Network and who are part of bureaucratic public organisations with strongly entrenched ways of doing things. Scott (2008) suggested that rules and procedures are strongly influenced by the environment at the time of their framing. The existing rules and regulations may not agree with the proposed new rules of the new Network that is coming into existence and this may be a cause for worry for an organisation who is perceived to be a strong member of the Network.

6.4 OPINIONS ON CROSS-AGENCY COLLABORATION

6.4.1 Opinions on Consensus building

A consensus or agreement enables all parties in the Network to understand a priori what is to be expected of them and what they will get in return for their participation in the Network arrangement (Ansell & Gash, 2008). Results from the survey shown above indicated that 75% of senior public officials surveyed agreed that consensus building among Network Stakeholders is an important and vital step to achieve success when deciding on common goals and objectives in any organisation. Results from this study suggest that organisation leaders within the public-sector establishment in Lagos State agree about the importance of reaching consensus on Network goals and objectives, and the need to follow laid down Network procedures if they are to realise the benefits of collaborative governance. This form of consensus-building should reflect across all public-sector institutions not only within Lagos State government establishments but across government establishments in other regions of the country.

6.4.2 Opinions on Co-operation

Alongside consensus and negotiated agreements is the issue of co-operation by all Stakeholders who have signed up to be part of the Network arrangement. Co-operation allows every member of the Network to work together and in line with a shared vision for the effective functioning of the desired E-government system of governance. Sixty-six-point seven (66.7%) of the survey participants agreed that co-operation is very important and vital to achieving a shared vision within a Networked arrangement, while a further 25% indicated that co-operation is important to the achievement of Networks goals. A single participant chose to be neutral on the issue of co-operation of members of a Networked arrangement. The lack of co-operation may be because of some Stakeholders not willing to concede ground during negotiations or perhaps to want to impose their ideas on the others. It is recommended that at this point, such Stakeholders should seriously consider their position on whether or not to continue as a member of the Network arrangement (Ansell & Gash, 2008).

6.4.3 Opinions on Negotiations

Form the survey results presented earlier in this research work, 41.7% of the participants surveyed said that negotiations on Network goals and objectives are import for Stakeholders wishing to take part in any Networked arrangement. This view is consistent with findings in the literature (Ansell & Gash, 2008; Guha & Chakrabarti, 2014). The survey result suggested that various forms of negotiations and agreements are fundamental to government information Networks at the core of E-government systems (Luna-Reyes *et a*l., 2007; Ansell & Gash, 2008; Guha & Chakrabarti, 2014; Larsson & Grönlund, 2016). 33.3% of the survey participants went a step further by arguing that negotiations are not only meaningful, but a crucial and very important aspect to consider if the Network arrangement is to function as intended. 16.7% of the research participants are of neutral opinion on the relevance of negotiation to the success of organisations within a Networked arrangement. However, one of the participants does not see the relevance of negotiation as an important element in the success of any Networked arrangement within an E-government system. The participant argued that what is necessary for the success of E-government is the desire and willingness of organisation leaders to provide the needed infrastructure, training, and support for employees to use and adopt E-government in their various organisations.

6.4.4 Opinions on Effective communication

Effective communication is the livewire of any organisation. The research survey results shown in the data presentation part of this chapter indicated that all the research participants (100%) agreed that effective communication is either important (33.3%) or very important (66.7%) to achieving success in the development and implementation of the goals and objectives of any E-government initiative. The result confirms the position in E-government literatures that effective communication is vital to the survival of Networks (Stanforth, 2007; Ansell & Gash, 2008). E-government and collaborative governance thrives on effective face-to-face dialogue between Stakeholders (Ansell & Gash, 2008). E-government process is consensus-oriented process that is often facilitated by ‘‘thick communication’’ made possible through face-to-face dialogue between all Network actors. Effective communication is a necessity for Stakeholders if they are to jointly identify opportunities for mutual gain. Having said this, one must understand that

face-to-face dialogue transcends avenues for negotiation. Effective communication is central to the process of breaking down perceived stereotypes and other barriers that often prevent exploration of mutual gains in the first place (Bentrup, 2001) cited in Ansell and Gash (2008). Effective communication is key to the process of trust-building, mutual respect, shared understanding, and commitment to the process of collaborative form of government (Ansell & Gash, 2008; Bernhard, 2014; Guha & Chakrabarti, 2014). To improve the chances of E-government success in Nigeria, all Stakeholders are encouraged to engage in meaningful face-to-face dialogue regularly in other to identify mutually beneficial goals that public organisations could pursue that would equally benefit the public who are the ultimate users of E-government.

6.4.5 Opinions on Network Collaboration

Literature has described many patterns of successful collaborations where Stakeholders have come to see that without engaging in some form of collaborative process with other Stakeholders who hold divergent views, they cannot always achieve their own goals unilaterally (Ansell & Gash, 2008; Bernhard, 2014; Chen et al., 2014; Gil-Garcia & Sayogo, 2016a; Ku et al., 2016; Ojo & Mellouli, 2016). Ansell and Gash stated that "Collaborative governance, however, often builds on a history of rancour that has institutionalised social psychology of antagonism. As mediators are keenly aware, ‘‘us versus them" dynamics are poisonous to successful collaboration" (2008, p.11). The survey results presented in the table above shows that 41.7% of the participants agreed that collaboration is important, while a further 50% of the survey participants agreed that collaboration is not only import but a very important and significant factor to the success of a shared vision within a Networked arrangement.

The research results from the survey showed that public-sector managers mostly agreed that Network and Collaborative processes are very important elements to the success of achieving the goals and objectives of Networks. This outcome has a significant implication for E-government development not only in Lagos State, but across public institutions in Nigeria.

To gain additional insight into the effectiveness of the Network processes and Cross-agency collaboration (starting conditions) and other variables within the new E-government framework, the researcher recommends that a non-parametric testing of the framework variables should be explored in future research work to determine the extent

to which the variables of the conceptual framework are associated with each other and to what level of statistical significance.

6.5 CONCLUSION

A careful analysis of the opinions on factors affecting E-government development in Lagos State and across public institutions in Nigeria can be summarised along the lines of the need for an improvement in accountability and transparency on the part of the government in Nigerian together with the urgency required in promoting e-readiness that encompasses infrastructure development, citizen empowerment through education and training, alongside the need to promote trust and inclusiveness that fosters community cohesion in public-sector organisations in Nigeria. In addition to the public ICT capacity-building and regulatory framework development, for E-government to succeed, governments must continue to actively use digital technologies to engage the citizens and likewise encourage the citizens to do the same.

The issue of oversight and regulation was also discussed to have lasting impact on how well the citizens of Nigeria will respond to the call to adopt E-government if control of the digital space is not properly monitored and regulated by authorities in government. The Nigerian government could certainly do more in the aspect of not only enacting laws and providing regulatory frameworks to govern the use of private data online, but also to find ways to enforce the laws that have been created if the citizens are to take government seriously.

Opinions on cross-agency collaboration and Network processes which are critical considerations to successful development of E-government projects were also highted to be part of the issues on the front burner of E-government development across all tiers of government. The success or failure of Networking process and cross-agency collaboration towards an effective E-government development programme in Nigeria was argued by many of the research participants to rest on the ability of all E-government Stakeholders in Nigeria to negotiate joint Network goals and objectives that must have the buy ins from all Stakeholders. The general opinion is that of consensus-building towards a collaborative form of government.

CHAPTER 7

RESEARCH CONCLUSION AND RECOMMENDATIONS

7.0 INTRODUCTION

The researcher in recognising the various roles of diverse E-government Stakeholders (Government, Organisations, Technology, User) as identified in this research work, used this chapter to draw conclusions on factors that have been identified in this study to either facilitate or impede E-government development in Lagos State of Nigeria, and can also be generalised across other regions in Nigeria due to the similarity in the ways public-sector organisations are set up in Nigeria.

Chapter seven provided an overview of the entire research work together with discussions on the findings and contribution to the body of knowledge of E-government. In conclusion, the researcher highlighted the research limitations, and made recommendations for future research works. The researcher also made practical suggestions of how the new E-government framework presented in chapter five could be used by the Nigerian government to improve service delivery and to promote good governance across all tiers of government.

Conclusively the researcher briefly discussed the benefits of transformative public services in an emerging economy as a paradigm shift from the traditional bureaucratic mode of governance to an E-government system of governance.

7.1 ANSWERS TO THE RESEARCH QUESTIONS AND CONCLUDING DISCUSSIONS

Research question 1 corresponding to objective 1: What are the major factors affecting the development of E-government in Lagos State of Nigeria?

After a thorough review of the literature, numerous factors were found to either impede or facilitate E-government development in Lagos State and across governmental organisations in Nigeria. The major factors found to impede E-government development

in Lagos State are: 1) E-government awareness issues, 2) problems related to E-readiness i.e. Lack of adequate ICT Infrastructures, low and erratic power supply, 3) high-level of investment cost to participate in E-government, 4) lack of adequate government policies and regulations to support E-government projects, 5) Complexity in understanding ICT systems and Management technical abilities, 6) Lack of accountability and transparency on the part of government and organisation leaders, 7) and resistance to change on the part of some organisation Departments and their workers.

Survey results revealed that 57.4% out of the hundred and eight (108) employees of Lagos State that were surveyed said they are aware of E-government programmes and services in their various Departments, while thirty-six point-one percent (36.1%) said that they are not aware of E-government strategies in their respective Departments. The figure suggests that more work needs to be done in the areas of E-government sensitisation programmes, given that only 25% of the senior managers surveyed can confirm that their Departments have E-government sensitisation plans in place as at the time of the research visit. 16.7% of the senior managers surveyed indicated that their Ministries are currently engaging in E-government sensitisation programmes to improve awareness and support for E-government initiatives of their respective Ministries.

Regarding the issues of E-readiness, it was found that 50% of the senior public officials that participated in the research agreed that E-readiness is very important in the process of E-government development in Nigeria. Literature on E-government development and uptake consistently pointed to low-levels of E-readiness in Nigeria and Sub-Sahara countries (Undesa 2005, 2012,2016; Albert, 2009; Fatile, 2012; Choudrie et al., 2017).

Survey results confirmed that Fifty-eight-point three percent (58.3%) of the public-sector managers interviewed agreed that investment cost to participate in E-government is an important issue to them, while a further twenty-five percent (25%) of the senior managers said E-government cost implications are serious and a very important consideration for them.

Empirical results showed that fifty-eight-point three (58.3%) of senior managers surveyed agreed that it is important and necessary for policymakers to set the overall strategic approach to E-government initiatives in the public-sector organisation. This finding is consistent with literature which suggested the importance of government intervention through ICT-policy initiatives (Bernhard, 2014; Jin & Cho, 2015; Koussouris *et al.*, 2015; Klievink *et al.*, 2016).

It was found that 41.7% of senior information officers interviewed within the public-

sector organisations agreed that complexity of E-government systems and the lack of adequate workforce skill coupled with low technical ability on the part of management is very important and contributory factor impeding the growth of E-government in their various Ministries, Departments and Agencies. 25% senior managers surveyed agreed that E-government complexity and unskilled management hampers E-government development in Nigeria across all tiers of government.

Regarding issues relating to accountability and transparency of public-sector leaders, it was found that a significant number of the research participants (over 90%) believe accountability and transparency issues are important factors capable of promoting the development of E-government in Nigeria. This finding is consistent with the United Nations opinions on the need for accountability and transparency in government (U.N, 2012, 2014, 2016) and those of notable E-government researchers who had expressed the need for governments to be more accountable and transparent in their efforts to promote good governance through the adoption of ICTs in public-sector organisations (Bertot et al., 2010; U.N, 2012; Ojo et al., 2013; Harrison & Sayogo, 2014; Al-Hujran et al., 2015; Linders et al., 2015).

The major factors found to facilitate E-government development in Lagos State of Nigeria

It was found that seventy-five percent (75%) of the senior government officials interviewed in their various Ministries within the Lagos State government secretariat agreed that improved accountability and transparency is a very important benefit of E-government. Ninety-one-point six percent (91.6%) of the senior managers surveyed agree that implementing E-government programmes in their various Ministries will have a positive and significant impact on reducing financial corruption and promoting transparency in their various Departments and Ministries.

Another important finding is that of improved Network and community cohesion. 91.7% of the senior managers and information officers that participated in the study agreed that implementing E-government initiatives will have either a significant or very significant impact in improving community and Network cohesion between various government Departments and Ministries. This finding supports the views in literature on the importance of Government Information Networks (GINs) (Janowski et. al., 2012; Pardo, 2012; Henning, 2016).

Research outcome also showed that E-government has the potential to reduce the cost of running public institutions. 66.7% of the senior officials and information managers surveyed agreed that a reduction of the cost of running their Ministries is either important, or very important consideration for developing and implementing E-government services within the various Departments in their Ministries. This finding supports the views of Gil-garcia and Sayogo (2016) who opined that decentralisation of government activities is expected to reduce cost of government operations because collaborating Agencies tends to share resources and database across Agency boundaries.

An important finding is that adopting E-government has the potential to promote the use of ICTs within public-sector institutions in Lagos State of Nigeria and across public-sector organisations in Nigeria. A significant number of the senior government officials interviewed agreed that developing and implementing E-government programmes is a very import avenue to promote the use of ICTs both within public-sector organisations, and to foster a cordial relationship between government and the public.

The factors identified above were subsequently validated through survey mechanism and statistical analysis.

Research question 2 corresponding to objective 2: Can inter-organisational 'Networking processes' strengthen the development of E-government in Lagos State of Nigeria and improve E-government adoption and use across all tiers of government in Nigeria?

The researcher identified the 'Networking process' as a valuable process towards developing an E-government framework that is acceptable to many E-government Stakeholders in Nigeria. The researcher decided to explore various components of the Network process vis-à-vis Shared vision, Network structure, Incentive design, Institutionalisation of Network goals, and Network partner selection, and how they can serve to develop E-government in Nigeria. The composite 'Network process' is validated through survey instrument.

For the Networking process to strengthen the development and implementation of E-government in Lagos State and by extension across other regions in Nigeria, the government must start to rethink its e-governance policies and practise to conform to international best practices. The Nigeria government should place more emphasis on developing institutional infrastructures that allows for linkages and collaboration

between, and among all tiers of government Agencies. This type of institutional linkages and collaboration promotes transformational approaches to governance in an inclusive, coordinated and integrated manner through which sustainable E-government systems can thrive. A sustainable E-government strategy requires the government of Nigeria to review its present strategic national plans regarding E-government to include public participation in every step of the E-government development processes. The E-government national plan should be modelled after successful e-service initiatives of the Lagos State government which encourages efficiency of service delivery, promote accountability and transparency, and encourage value co-creation at all levels of government. The Nigerian government must continue to recognise that the intrinsic value of E-government lies in its contributions and benefits for the citizens, and with this thought, the government should work assiduously to ensure that E-government flourish in Nigeria.

The sustainable development challenges of E-government in Nigeria includes the central issue of service integration across multiple organisations which must be confronted through a whole-of-government (WoG) approach; building linkages across multiple governmental organisations and promoting interconnectedness among various socioeconomic and environmental activities across the country.

Without a doubt, the effective coordination of public services in Nigeria requires some forms of Networked arrangement of government MDAs. This sort of Networks is often referred to in E-government literature as Government Information Networks (GINs). GINs as a whole-of-government approach to integrated government services could provide the starting point for structural reformations of the public-sector organisations in Nigeria. The benefit of deploying GINs in public service administration allows for collaborative participation of multiple governmental MDAs, which in turn promotes efficiency and reduces wastages of limited and essential resources that could have otherwise been used effectively for the common good of the people. GINs have the potential to strengthen the development and implementation of standards and protocols needed for data and information exchanges across multiple organisational boundary lines in addition to improving access to and use of government data by the public. However, for GINs to function as intended, certain conditions or frameworks for data interchange must be satisfied. Important conditions needed to achieve data interchange among different communication infrastructure and systems housed in various government organisations and across multiple geographical location is the ability to develop and implement a robust Interoperability Frameworks (IF) based on an agreed set of standards

and protocols subscribed to by all actors in the Government Information Networks. These standards and protocols are generally referred to in literature as Interoperability (IOP) standards. While IOP is the ability of disparate and diverse organisations to interact towards mutually beneficial and agreed common goals. This often involves the sharing of information and knowledge between organisations through mutual business processes and by means of the exchange of data between their respective ICT systems (Commission of the European Communities, 2010). Interoperability Framework (IF) on the other hand is "a document or group of documents that specify a set of policies, guidelines, recommendations, concepts, principles, vocabularies, standards and practices for Agencies that wish to work together, towards the joint delivery of public services" (Lisboa & Soares, 2014, p.639).

Although there may be variations in the approaches of individual government organisations towards the use and adoption of innovative ICTs, the application of Network concepts will promote cooperation and improve cross-agency collaboration between government institutions. At this juncture, one needs to recall that essential to achieving a seamless and effective Network arrangement, all five elements of the Network concept vis-à-vis partner selection, shared vision, institutionalisation, and incentive design are important and must be given adequate considerations. Partner selection is usually a recommended first step in Network formation due to its ability to impact subsequent stages of the Network formation process. The choice and selection of actors based on resource dependency and alignment of interests with Network goals together with incentives for members participating in the Network, helps the Network to achieve its overall objectives.

Evidences from the case studies used for this research work showed lack of cross-agency collaboration and a virtually non-existent Government Information Networks in government establishments. A better understanding of cross-agency collaboration and the formation of adequate government Networks will help to develop a suitable model of E-government in Nigeria that would not only lead to good governance in Nigeria, but also improve her E-government rankings and ratings among committee of nations. Yes, inter-organisational 'Networking processes' can strengthen the development of E-government in Lagos State, and across other regions of Nigeria and improve E-government adoption and use across all tiers of government in Nigeria if care is taken by all Stakeholders to pursue elements that encourages inter-organisational Networking across organisational boundaries and across all tiers of government institutions in Nigeria.

Research question 3 corresponding to objective 3: Does inter-organisational collaboration exist between public institutions in Lagos State of Nigeria that could promote and encourage the adoption and use of E-government in Lagos State and across public institutions in Nigeria?

There is a large body of literature that has investigated the gradual shift from traditional Weberian hierarchical public governance models towards collaborative governance Networks, and the increasingly significant roles ICTs are playing in such Networks (Henning, 2016). The growing phenomenon of Government Information Networks (GINs) showed how government information Networks are providing support for cross-agency collaboration through information and data sharing among government Agencies (Janowski *et al.*, 2011). Dawes (1996) and Pardo (2007) extensively discussed issues relating to government data and information sharing and its benefits to E-government development. Gil-Garcia et al., (2007) discussed the challenges of government information sharing, while Estevez *et al*., (2012) propose a conceptual framework for developing government information sharing strategies. Yang and Maxwell (2011) investigated success factors behind government information sharing across organisational boundaries.

Evidence from the research visit and questionnaire surveys revealed a significantly low level of collaboration among different governmental Agencies in Nigeria due to many of the government MDAs existing as stand-alone entities at the time of the research visit.

To improve collaboration among governmental institutions in Nigeria, the government could encourage the adoption of the whole-of-government approach which promotes and encourages collaboration and coordination between government MDAs and other E-government Stakeholders. This form of inter-agency collaboration using ICTs is identified in literature as Government Inter-organisational Information Interchange (GIII) which is made up of trusted social Networks, interoperable technical infrastructure, integrated data, and shared information.

Findings from this research cleary indicated that there is inadequate collaboration among public institutions of the Lagos State government. Evidence from this research showed that a significant number of senior managers and senior information officers at public institutions in Lagos State government Ministries agreed that collaborative participation

is key to developing a consensual E-government framework in Nigeria, but the reality is that many governments MDAs in Nigeria function as siloed organisations with little or no cross-agency collaboration. Data and information sharing across organisational boundary lines is virtually non-existent in the public-sector organisations in Lagos State and across public organisations in Nigeria.

To address the lack of collaborative participation in government institutions in Nigeria, the government should actively pursue programmes that allow for open and collaborative system of governance.

An open and collaborative system of governance for Nigeria should entail a gradual and consistent move on the side of the government to reform the public-sector organisations, focusing on achieving a paradigm shift from the bureaucratic and top-down governance approach currently practised in Nigeria to a system of governance which is innovative, proactive and responsive to the demands and aspirations of the citizens through value co-creation in public services. This paradigm shift must be championed by organisation leaders (Chief information Officers) who are willing to be part of government information Networks.

Organisation leaders in Nigeria wishing to be part of government information Networks must see themselves not as unique individuals who are superior to other members within the Network, but as Network collaborators and change facilitators with a common mind working towards a common set of Network goals.

Organisation leaders in public institutions in Nigeria must recognise that collaborative Network building is not just towards accomplishing a set of common goals, but the building of an enduring relationship between members of the Network. An enduring relationship will provide a fertile ground on which Network task will take root and grow into actualising the Network goals. However, the building of relationship first and foremost necessitates breaking down communication barriers and developing trust among Network members. Trust is a quality that must be earn through consistent efforts and hard work. Being able to listen to the concerns of other Network members, not just telling them what to do, is one good way of earning Network trust and support.

By establishing public-sector collaborative platforms at every level of government activities, the role the Nigerian government plays in the affairs of national development takes on a new and deeper meaning. The general notion of government – to steer, direct, or to control as previously understood and practised, changes to one of governance – to

enable, facilitate, or to coordinate public activities in such a way that fosters inclusiveness and encourages value co-creation.

In the context of government's role as an enabler or a facilitator, government must make available the 'mechanisms for change' in the form of regulations, tools and machineries that would serve to guide, coordinate and facilitate the change activities that both government and the citizens are seeking to achieve. These 'change activities' should be developed in a collaborative atmosphere that encourages and allows inputs from all E-government Stakeholders, while at the same time incentivises citizen participation.

The processes of value co-creation entail a form of collaborative participation where every stakeholder matter in an every-opinion-counts approach to collaboration. The Nigeria government should create forums where citizens and government come together to create a balanced public value product in a 'win-win manner' that satisfies the needs of most of the citizens if not all.

An approach to an inclusive form of governance which the Nigeria government could adopt is the bottom-up approach to service development, implementation, and delivery that promotes effectiveness, reduces cost, promotes transparency and accountability, and more importantly creates a sense of ownership through personalised experiences.

To encourage co-creation of services that comes with added value, the Nigerian government should attract citizen's participation through the provision of incentives. These incentives could be in the forms of resources such as allowing citizens access to relevant data and information that they need to generate products (services) that are valuable to them. This aspect of value co-creation is gaining popularity as government services gradually moves towards customisation and personalisation of services like those currently being experienced in the commercial sector of the society. Another form of incentive could be the devolution of power to the citizens to make decisions on certain forms of services they would prefer that otherwise might differ from governments choice. Where possible, financial resources should be provided in forms of loans and grants to help less privilege citizens to buy electronic devices to facilitate their access to online government data and information. While the provision of incentives and other enabling factors are made available by governments to encourage citizen's uptake of E-government, the overall goals must be those of improving the relationships, delivering effective and efficient public service, promoting accountability and transparency in government, and encouraging citizen participation in governance.

While there exists much benefit in government's willingness to deploy ICTs at the heart of public services, collaborate on service co-creation, and to encourage citizens e-participation, one must add that the principal role of coordinating and directing public affairs remains a government priority which cannot be delegated entirely to the whims and caprices of every member of the public without proper oversight and regulations.

Research question 4 corresponding to objective 4: Can reformation of the existing public-sector organisations in Lagos State improve the development of E-government in Lagos State and be replicable across other regions in Nigeria?

The public-sector service landscape in Nigeria is changing due to the government's efforts in trying to find ways to respond to the growing demands of an increasingly technologically sophisticated populace. The earlier concept of New Public Management (NPM) reforms adopted by various governments around the world was as a result of the efficiency gains experienced by the private-sector organisations which favoured a culture of enterprise and competitive behaviour (Tassabehji et al., 2016). To remain relevant and alive to the needs of the modern society, the Nigerian governments needs to adopt a similar enterprise approach similar to those obtainable within the private-sector organisations. A way of achieving this is to leverage on the innovative powers of ICTs to find digital solutions to the economic, political and social demands of the Nigerian people.

The reformation and transformation agenda for public-sector organisations should be designed in a way that takes cognisance of the socio-technical realities and cultural values of the local people to prevent unanticipated outcomes. The policy-thrust for an all-inclusive reformation agenda should reflect sincerity in the government's willingness not to pay lip service to concepts of innovation in the public-sector organisations, but to be active participants and drivers of such changes. The government's reformation policies should among other things set practical guidelines and support mechanisms that encourages the development, implementation and use of ICTs within, and throughout public-sector organisations in an organised and deliberate manner to promote good governance and foster democratic participation and values for all citizens.

It is in the spirit of actualising a vision of an ICT-led public-sector reformation in Nigeria that the researcher conceived a consensual E-government framework that is agreeable to Stakeholders and jointly developed, not as a magic wand capable of fixing all ills in the

Nigerian society, but as a powerful tool with the potential to assist governments, if applied appropriately, to alleviate extreme poverty, promote inclusiveness in governance, provide economic opportunities, and to deliver valuable public-sector services for all the citizens.

Information Technology due to its many applications within the society and government can be a driver and enabler of change and reformation of the bureaucratic form of government (Luna-Reyes and Gil-Garcia, 2014). Information technology should be taken as a useful tool by the Nigerian government for reforming the weakness in the public-sector services to improve service quality and government efficiency, and at the same time reducing cost of running the government.

Reforming public-sector organisations requires a transformational approach using ICTs (U.N, 2012; Millard, 2013; Bannister and Connolly, 2014; International Telecommunication Union (ITU), 2014; Luna-Reyes and Gil-Garcia, 2014; Tassabehji, Hackney and Popovič, 2016b; OECD, 2017). Internet-enabled connected form of governance is likely to contribute to the transformation of the public-sector in Nigeria that could result in greater cost savings, enhancing efficiency and reducing administrative burden of the government. The United Nations E-government surveys over the last decade have shown examples of how governments around the world have leveraged the powers of ICTs and the Internet to improve relationship between the government, businesses, and the citizens. ICTs are being used not only to promote good governance but also to find evolutionary ways towards providing access to a wide range of integrated public services online through one-stop government portals (Undesa, 2016). This form of governance calls for innovative manner of thinking on the part of the government and the citizens.

The transformational approach by the Nigerian government should be one that leverages the power of ICTs to drive fundamental changes in government. Deliberate efforts to move away from Weberian bureaucratic practices that are hierarchical, rigid, and governed by rules must be actively pursued and encouraged by the government across all public institutions. To achieve these changes in governance, public organisations and its structures must undergo fundamental changes too. Re-engineering of government activities should be centred on making extensive use of computing systems and Internet-enable technologies to revolutionise how public service is created and delivered. ICTs should underpin governmental reforms in all aspects, placing it at the very core of

government reformation agenda and made to sit at the core of public-services should be a top government priority if E-government is to succeed in Nigeria.

While reforming the public-sector organisations, the Nigerian government must keep in mind that an evolutionary process of government based on restructuring services through technology is subject to "patterns that affects the process in deep, subconscious and recursive ways" (Janowski 2015). Taking note of this pattern of development could be useful when modelling methodologies for Information Systems related to governance in Nigeria.

Table 105: Fundamental changes in government (from Government to Governance).

FACTORS	TRADITIONAL MODE OF GOVERNMENT	E-GOVERNANCE (Expected outcome)
Leadership Style	Command and Control, Directives and Instructions. Bureaucratic red tapes, inefficiencies, huge cost, citizen exclusion.	Collaborative and Partnership. Innovative, Transformative, Transparent, Lower cost, citizen inclusion.
Organisation structure and process.	Hierarchical. Siloes and organisational boundaries.	Decentralised. Multi-directional. Coordinated Networks and information sharing. Cross-agency collaboration.
Communication approach	Centralised. Top-down approach.	Multi-channel. Formal and informal approach. Back-and-forth.
Interaction	Face-to-Face. Paper intensive.	Electronic exchanges. Less face-to-face interaction.
Service mode	Manual.	Electronic. Self-service: Anywhere, anyhow.

	Bricks and mortar: specific geographic location and time.	

Source: The research author

Research evidence showed that many public-sector organisations in Nigeria operates in a bureaucratic manner. The approach to governance and the decision-making processes concerning public services remains largely a top-down approach. When designing and developing government websites, there are little or no consultation with the public on what the design or contents of the government websites should be. If the Nigeria government is to benefit more from E-government system of governance, more efforts must be directed at promoting inclusiveness and participation by seeking all forms of avenues to engage the citizens to take part in every level of E-government development and implementation across board.

A major factor that features prominently in E-government development and reformation of the public-sector organisations is the nature of the political environment and government policies regarding innovation and use of ICTs for public service delivery. What governments do, and what they fail to do with regards to use and adoption of technology can either promote or impede the development and implementation of E-government projects and initiatives. Whether a government is open and ready for political reforms or not will determine to a large extent the level of adoption of innovations in its public-sector organisations. Having said this, one must also recognise that some African nations are making headways in the use of ICTs for public service delivery (Undesa, 2016; choudrie *et al.*, 2017). Many African nations are determined to have E-government services and are ready to put in place the necessary ICT polices to support their efforts (Maumbe, Owei, & Alexander, 2008). According to a report from the Economic Commission for Africa (ECA) 1996, a starting point for countries in Africa to join the global trend of innovative use of ICTs was laid at the ECA summit in 1996. Various African countries together with their representatives adopted the African Information Society Initiative (AISI) and recommended the development and implementation of national policies and plans to promote E-government related activities in Africa and to develop national plans and policies to promote the use of ICTs in national and economic sectors of African countries (Hafkin, 2009). The 2014 United Nation's E-government survey reported that despite the structural and economic challenges facing E-government

developments in Africa, advancement continued to be made in the use of ICTs for public service delivery in many African countries. Besides regulations and policies, several ICT-oriented programmes and interventions by regional and international organisations are assisting the development of E-government in many African nations. Prominent among these development programmes are the United Nations Economic Commission for Africa (UNECA), which is at the forefront of advocating for capacity building through educational and training programmes in ICTs and similar areas.

Meaningful reforms demand sincere interest and commitment on the part of governments. Without the proper level of input and guidance, public-sector reformation based on ICT capabilities will remain a distant dream for many African nations. Investments in ICTs and related technologies will not undo corrupt and ineffective bureaucratic public institutions, nor will it remove bureaucrats who benefit from systems of government that are susceptible to corrupt tendencies. What is needed to achieve a reformed public-sector organisation that can respond to the demands of the citizens is a political environment that is transformative in nature and supportive in its approach to 'change' initiatives.

Evidence from this research has suggested that on closer examination, the attitudes and records of the Nigerian governments with respect to political reforms is that of an uncertain and mixed outcome. Though E-government literatures presented mixed views on E-government development in Africa as a whole, some have pointed to a handful of governments in Africa that are seizing E-government initiatives and forging ahead with impressive E-government programmes that are benefitting their citizens (Choudrie *et al.*, 2017).

The overall E-government picture in Nigeria paints a pattern of lack of consistent public reformation policies and programmes with respect to adopting E-government systems within the public-sector organisations.

Having said the above, one can be optimistic that the current efforts of the Nigerian government towards reforming the core organisational structures of the public-sector organisations and their services using ICTs to drive core organisation functions across all sectors of government is a step in the right direction towards then the development and implementation of E-government systems in Nigeria.

7.2 CONCLUDING DISCUSSIONS ON IMPROVING NIGERIA'S E-GOVERNMENT RATING AND RANKING

From the literature review, research visits, and surveys, it became evident that the challenges of E-government development in Lagos State and across public institutions in Nigeria are multifaceted as demonstrated in the outcome of the public organisations surveyed in this research work. During the various interviews and surveys conducted for this research work, the researcher realised that the concept of E-government or E-governance is either partially understood or misrepresented at various levels across many public-sector organisations in Nigeria.

Evidence from this research work showed that major factors impeding development of E-government in Nigeria included issues bordering on E-government awareness, challenges associated with E-readiness which encompasses E-government support infrastructure, high-level of E-government investment cost, lack of adequate government policies and regulations on E-government development, complexity in understanding IT/ICT systems which included Management technical ability, lack of accountability and transparency on part of government and organisation leaders, and issues relating to resistance to change in public institutions (Heeks, 2003; Schuppan, 2009; Adeyemo, 2011; Fatile, 2012; Ashaye, 2014).

Factors found to facilitate E-government development in Nigeria were stated as benefits of using ICTs for public service delivery which included: improved accountability and transparency, reduction of financial corruption, improvement in community and Network cohesion, reduction in the cost of running government organisation, and the promotion of ICTs usage in public-sector organisations (Adeyemo, 2011; Fatile, 2012; Choudrie *et al.*, 2017)

The researcher explored the concepts of Network process and cross-agency collaboration and evaluated the associated variables to ascertain whether they can be used to improve E-government frameworks in Nigeria.

From the research interviews conducted, it was realised that many of the senior managers interviewed had a good understanding of the potentials of using ICTs for public service delivery, many believed the economic and political realities in Nigeria are not good enough at present to support advanced levels of E-government projects in Nigeria. Many of the research participants believed that gradual and consistent approaches to changing

from the present bureaucratic form of government to one which relies more on ICT capabilities.

The content analysis of selected government Internet web portals revealed that fundamental challenges to developing and implementing E-government were those of collaboration, Networking, and integration of public services across all tiers of government.

From the research data analysis, the researcher learnt that major risk factors impeding E-government development in Nigeria clearly pointed to issues bordering on trust, privacy, confidentiality, data and information security.

The researcher realised that a successful E-government development framework must entail a Whole-of-Government (WoG) service approach. Lack of cross-agency collaborative participation between various government organisations accounted for the notable weakness in E-government systems in Nigeria. Significant number of governments MDAs are mainly siloed structures with non-existent linkages across organisation boundary lines. Evidence from literature showed that countries that were rated high in their E-government development index (EGDI) had good technical infrastructure and constantly pursued a whole-of-government approach to service delivery. It was also noted that countries that have online consultation as part of their E-government services often scored high in E-participation too. An example is the United Kingdom which scored the highest (1.0000) on the EGDI in 2016 U.N E-government survey was partly due to the UK government efforts to strengthen e-information and e-consultation, together with consistent reviews and improvements in security and authentication of its E-government's end-to-end processes (U.N, 2016) The UK governments innovative approach to engaging the public has enabled its citizens to be more interactive with their government web-portals. The continuous learning and re-engineering of its E-government processes contributed to the United Kingdom securing the top spot in the most recent United Nations E-government survey of 2016.

To benefit from E-government and to improve its present status and ranking, Nigeria could emulate the UK's experience by continually examining and building upon its present E-government capabilities in the key service areas mentioned above, and also strengthened its telecommunication infrastructures, Internet penetration and usage for e-service delivery, and human capacity development through targeted ICT skillset.

A key component of the UN EGDI measurement index that is capable of quickly accelerating E-government development in Nigeria is mobile telephony. Mobile

telephony has an extensively coverage that spans the length and breadth of Nigeria. Government should take advantage of the large mobile penetration in Nigeria and leverage on the opportunities that comes with such huge mobile telephony coverage and use by the citizen. Government's efforts should be geared towards delivering public services that can be facilitated through simple use of mobile phones to pass information to the citizens using SMS, and other communication techniques that the social media has made possible.

The issues relating to lack of access to web-enabled ICT devices by millions of Nigerians due to affordability is also a growing concern. Governments should endeavour to work closely with manufacturers and vendors of IT and ICT devices with a view to producing more affordable electronic devices that financially poor individuals can afford to buy and maintain.

Additionally, to improve E-government development in Nigeria, government must pay attention to the chronic problem of erratic and low power supply. It is no gainsaying that without power, E-government simply cannot work. Governments are encouraged to commit more resources to improving the generation and distribution of electricity throughout the country.

Efforts towards bridging the digital divide between rural and urban cities must also be stepped up to allow wider participation of citizens. Instead of concentrating national resources on urban areas alone, government should invest more in rural communities which plays host to a larger percentage of the country's population.

Enlightenment programmes and trainings that will offer less privileged individuals in the communities with ICT skills that are necessary to operate electronic devices must be prioritised either through direct government interventions or by engagement through the public-private-partnership programmes.

To improve Nigeria's E-government ranking and rating, Government Information Networks must be developed in such a way that accommodates cross-agency collaboration throughout the entire length and breadth of the public-sector organisations in Nigeria. Since E-government thrives on connectivity between government Agencies, a whole-of-government approach to service delivery should be actively pursued and implemented across all tiers of government. Interoperability frameworks and Network standards must be designed and developed in a way that not only allows for cross-agency collaboration, but also facilitate a uniform and a common approach to data and

information processing and sharing by government Agencies in a centralised and coordinated manner.

The novel E-government framework presented in this work emphasised the use of Network processes (O'Toole, 1997; Guha and Chakrabarti, 2014; Ojo and Mellouli, 2016) and cross-agency collaboration (Ansell and Gash 2008; Yang and Maxwell, 2011; Yang, Pardo and Wu, 2014; Gil-Garcia and Sayogo, 2016) to develop an E-government framework that is consensual and capable of improving data and information sharing across organisation boundary lines irrespective of their physical geographical locations and useful to the government to improve relationships between the government, businesses and the citizens in a truly transformative approach to governance that facilitates a paradigm shift from a bureaucratic and lethargic forms of government to one that is agile, accountable, effective and efficient in meeting the demands and aspirations of the 21st century information society.

Conclusively, E-government could be improved in Nigeria by reducing failures of technically oriented IT/ICT projects by conducting careful assessments and evaluation- prior to development and implementation - of the technical and organisational capacity of Nigeria alongside its organisational structures, cultural values and economic realities. It is important to note that for E-government to succeed anywhere in the world, including Nigeria, all critical components vis-à-vis Technology, Organisation, and the Environment must be considered with the citizens at the centre while at the same time maintaining a careful balance of a top-down, bottom-up approach to governance.

7.3 RESEARCH CONTRIBUTIONS

E-government practise in Nigeria is still at an early stage of development. Existing literature examining the phenomenon of E-government in Nigeria in terms of supply (Government) and demand (Citizens) are few. An important aspect of this research is to help identify the challenges facing, and opportunities available for assisting the developmental process of E-government in Nigeria vis-à-vis an empirical investigation of the factors impeding and promoting E-government in Nigeria by analysing the experiences of various E-government Stakeholders in Nigeria with a view to understanding what the E-government development issues are, and working towards the development of an E-government framework that is consensual and capable of achieving better service delivery for the benefits of the citizens of Nigeria.

7.3.1 CONTRIBUTION TO KNOWLEDGE

Literature showed that existing E-government frameworks in Nigeria are mainly descriptive and non-empirical (Mundy & Musa, 2010; Adeyemo, 2011; Ojo *et al.*, 2012; Fatile, 2012; Ashaye, 2014; Choudrie, 2017). Through a systematic review of extant E-government literature, case study reviews, and surveys, the researcher was able to identify additional critical factors impacting E-government development in Lagos State and across government organisation in Nigeria. Findings from this research work represent a novel contribution with implication for both E-government researchers and practitoners in the context of Nigeria. The research findings are based on empirical evidence from survey inquiries conducted in Nigeria. In addition to the E-government factors that have been previously identified by researrchers in E-government literatures, the researcher was able to identified two major factors (Network processes and Cross-agency collaboration processes) as critical elements necessary for the development and implementation of a consensual and function E-government framework for Nigeria. These factors have been discussed extensively in chapters two and three of this work.

7.3.2 CONTRIBUTION TO PRACTICE

The E-government development framework for Nigeria presented in this research work is a novel contribution. The E-government development framework built on previously known E-government frameworks available in the public domain. The novelty of the E-government development framework featured an Interoperability framework, Network processes and Collaborative processes needed for developing and implementing Government Information Networks (GINs) - a first in Nigeria.

Earlier models of E-government frameworks for Nigeria have limited functionalities and suitable for implementation across tiers of government due to the lack of detailed considerations for essential elements of cross-agency collaborations and Networking processes which has been identified in extant literature as vital elements in the development and implementation of E-government systems.

7.4 RECOMMENDATIONS FOR E-GOVERNMENT FUTURE RESEARCH

As researchers look ahead to future E-government research in Nigeria, many research paths could be taken from this point. First, this research produced as an outcome a consensual E-government framework that could serve as a suitable E-government model for adoption by the Nigerian government and by extension other emerging nations around the world. The E-government framework and its constructs are by no means exhaustive as further elaborations and modifications could be made to improve on them.
To improve generalisation of the research findings, public-sector organisations in other States and regions in Nigeria could be explored to reflect national opinions and sentiments regarding the adoption and use of E-government.

Second, further empirical investigations into the distinctiveness of the variables of the framework would be required to advance the theoretical argument at various levels of its developmental process with a view to hypothesis development and testing.

Third, additional themes of Network process, Interoperability framework, and Cross-agency collaboration that are at the heart of this conceptual framework could benefit from further analysis that investigates whether there exist some form of causality or correlations between the various construct and whether these elements can strengthen Government Information Networks (GINs) in public-sector organisations.

Finally, other E-government researchers might find it interesting to explore why and how public-sector organisations in Nigeria could leverage new and emerging technologies on existing models of E-government frameworks and best practises in Nigeria to improve public-sector service delivery and e-participation among the citizens.

7.5 RECOMMENDATION FOR E-GOVERNMENT PRACTISE

E-government practise in Nigeria is still in its developmental stages. Many of the public-sector organisations still exist in siloes and public service delivery is mainly carried out through individual visits to the traditional brick and mortar facilities. For a paradigm shift to occur from traditional and bureaucratic model of governance to one that recognises

and place ICTs at the core of its services, governments must recognise their roles, not only as enablers of change, but also facilitators of the change.

A way forward is for the government to first recognise the need for change and to be willing to commit to actualising change reforms. By subscribing to the good governance and transformative agenda of the United Nations, the Nigerian government could reform its public-sector organisations by adopting a whole-of-government service approach which seeks to integrate public services across multiple Agencies and geographical locations and deliver such services using multiple delivery channels anchored on ICTs and powered by the Internet.

Second, governments need to articulate meaningful national vision and strategies based on the socio-economic, technological and environmental realities of the country. Having properly assessed its development priorities and financial capacity, government should focus on developing and implementing E-government projects based on concepts that promotes value co-creation, embrace inclusiveness, and encourages collaboration between all Stakeholders.

Third, E-government runs on modern Information Communication Technologies. Without adequate technical infrastructure to support ICTs, E-government will remain elusive to the Nigerian government. The government is encouraged to invest more financial and human resources into developing ICT capabilities across all tiers of the public-sector in Nigeria. The government should take proactive steps to strengthen Public-Private-Partnership by encouraging joint investments in ICTs and allied services that promotes the development and use of E-government programmes. The provision of waivers and incentives could lure investors from outside the country to also invest in infrastructural development needed for E-government development and implementation in Nigeria.

Fourth, to improve Nigeria's E-government ranking and ratings, governments must improve on its Online Service Index (OSI), Telecommunication Infrastructure Index (TII), and the Human Capital Index (HCI) which taken together forms the measurement criteria for E-government Development Index (EGDI) for any country. In summary it is recommended that for effective E-government practise, the Nigerian government must take deliberate and consistent steps to:

a) Reform public institutions
b) Invest in infrastructure development
c) Invest in ICT skill acquisition and training programmes

d) Build Government Information Networks to integrate public services and encourage all MDAs to participate in the Networks
e) Promote value co-creation through collaborative citizen engagement
f) Promote E-readiness and E-awareness through workshops and sensitisation programmes.

It is also recommended that continuous appraisals and re-appraisal of E-government development models are carried out from time to time in Nigeria to reflect the dynamism in E-government phenomenon and research.

7.6 RESEARCH CONCLUSION

The researcher having reviewed the factors facilitating and impeding E-government development in Nigeria by conducting literature reviews, interviews, and surveys in Nigeria concluded that the challenges of E-government development in Nigeria transcends issues relating to politics, or the provision of socio-economic and technological infrastructures. The Nigerian government is realising that the public-sector service landscape across the entire globe is moving into a new era of digital government increasingly facilitated by the rapid rise of the Internet and the tremendous progress in ICT capabilities and Internet-enabled electronic devices. As the evidence from this research survey indicated, citizens are in constant demand for change. Individuals clamour for faster and convenient services while at the same time expect to be heard loud and clear by their government.

Literature showed that the rapid and continuous changes seen in the modern knowledge society is forcing many governments around the world, including Nigeria to seek for ways to respond to the 'wicked problems' in the society and the ever-growing demands of increasingly technologically sophisticated citizens.

The adoption of the NPM into public-sector administration to provide response to the needs of the society is becoming ineffective due to the rapid changes in the society. The reality now is that NPM is no longer suitable to address the changing needs of the public due to changes brought about by the Internet revolution. While the New Public Management approach towards governance emphasised the importance of promoting competitiveness and enterprise within the public-sector organisations as ways to promote efficiency of service and to create value in public-sector services, a newer form of approach – Digital era governance (DEG) –advocated for a technology-driven solutions

as a plausible option to address the growing sophistication of the citizens and to confront the challenges of delivering public services effectively and efficiently in a dynamic environment.

In identifying governments increasing role in managing societal assets and the need for transparency and accountability in public offices, there are increasing needs for government to deploy suitable ICT tools that can help in public asset management.

There is no doubt that ICTs offer unique platforms to engage citizens in a timely, effective, efficient, transparent and accountable manner, in addition to providing linking mechanisms that allows public organisations to access and share resources across organisational boundaries and geographical space. It is important to note that the digitalisation of the public-sector organisations requires the embedding of ICTs at the core of every E-government framework with emphasis placed on improving internal administrative efficiency and to stimulate better external workings with a view to delivery of public information and services. Digitalisation of public services also allows for extensive citizen engagement and interactions using web-enabled devices. Citizen engagement and participation is a hallmark of good governance advocated in many literatures on electronic government practises.

The researcher having examined the factors impeding and facilitating E-government development in Nigeria was able to develop a novel framework of E-government. The E-government framework developed was validated using survey instrument that identified and tested the variables of the conceptual model.

The overarching challenge of E-government development in Nigeria is not mainly to improve its EGDI scores, but on whether the intended objectives of reaching, informing, and delivering public services to the citizens is achievable using ICTs and the Internet. The research evidence has shown a mixed outcome. On one hand, the picture is that of a nation still saddled with bureaucratic and siloed institutions, while on the other hand, one sees evidence of pockets of innovative practices based on ICT-led initiatives on the part of federal, state and local government Agencies. Suffice to say, the provision of a citizen-centred E-government requires an ongoing commitment by all Stakeholders. Governments and citizens must all continue to seek opportunities to make public service delivery accessible to all irrespective of social status or geographical locations. The real value of E-government will increasing be measured and defined by its contributions to improving accountability and transparency in public-sector organisations, improving service efficiency and effectiveness, reducing cost of running government, promoting

inclusiveness through E-participation and value co-creation, and improving relationship between government and citizens.

It is important to acknowledge that transformative changes in the public-sector organisations happens slowly. The slow pace of transforming the public-sector organisations from its old entrenched order into a new paradigm of governance built on modern ICTs and the Internet.

Efforts at developing a viable E-government system in Nigeria must be made and sustained by key E-government Stakeholders not only in designing policies and guidelines needed to develop and implement E-government systems, but to work across board in all areas of organisation and institutional transformation. Crucial questions must be asked about the nature and extent to which ICTs and its related technologies would be embedded in public-sector organisations in Institutions of government in Lagos State and across all tiers of government in Nigeria. And finally, the level of commitment by all E-government Stakeholders in Nigeria to the development of public-sector institutions based on modern ICTs and the Internet would determine whether E-government thrives in Nigeria or not.

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APPENDIX

E-GOVERNMENT QUESTIONNAIRE FOR RESEARCH ANALYSIS

SECTION A: E-GOVERNMENT QUESTIONNAIRE (SUPPLY-SIDE)

1. what is the name of your organisation?

2. what is your age group?

below 20
21 to 40
41 to 50
51 to 60
above 60

3. what is your highest level of education?

- High school
- Certificate
- others, please specify below

4. what is your present position at work?

5. approximately how many people currently work in your organisation?

6. what is the approximate population of your community?

7. what is your contact address?

SECTION B: ELECTRONIC GOVERNMENT AWARENESS

8. what is your understanding of E-government?

9. which department(s) within your organisation participates in E-government?

10. how long have the department(s) in your organisation been participating in E-government?

11. Does your organisation have an E-government strategy? Yes

- [ ] No
- [ ] If yes, please describe briefly
- [ ]

13. which of the statement(s) below best describes your organisation's E-government awareness? I have not

- ☐ **heard of the term 'E-government', not until now.**
- ☐ **I have heard of the term 'E-government', but dont use it in any form here. Our**
- ☐ **organisation is currently planning for the development of E-government.**
- ☐ **Our organisation is now engaging in E-government sensitisation for its employees. Our**
- ☐ **organisation makes extensive use of information communication technologies. Our**
- ☐ **organisation makes use of E-government in the form of.....**

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14. Relevant E-government literature indicates that implementing E-government can bring a number of benefits to the organisation, which of the following benefit(s) do you think your organisation will benefit from, if it implements E-government? please select all the options that applies to organisation below indicating the level of importance to your organisation.

	Very Important	Important	Neutral	Unimportant	Very Unimportant
Improve productivity of government	☐	☐	☐	☐	☐
Improve accountability and transparency in government	☐	☐	☐	☐	☐
Reduces overall cost of running the organisation	☐	☐	☐	☐	☐
Improve network and community cohesion	☐	☐	☐	☐	☐
Promotes the use of ICT within the organisation and the general public	☐	☐	☐	☐	☐
Improve and enhance decision making process within the organisation	☐	☐	☐	☐	☐
Improves quality of service delivery to customers	☐	☐	☐	☐	☐
Reduces paperwork for the organisation	☐	☐	☐	☐	☐
Promotes inter-agency collaboration	☐	☐	☐	☐	☐
Reduces corruption in the public sector organisa tions	☐	☐	☐	☐	☐
Improves data collection, processing, and storage.	☐	☐	☐	☐	☐

15. what other benefit(s) do you think your organisation might gain through implementation of e-government services?

16. Relevant literature explains that there are certain risks associated with implementing electronic government services and the sharing of information among different governmental departments. what sort of risk(s) do you percieve your organisation may be exposed to if it participates in electronic government?

17. Please select and indicate the level of importance the underlisted risk factors may have on your organisation.

	Very Significant	Significant	Neutral	Insignificant	Very insignificant
Information security i.e. Identity theft, data theft.	☐	☐	☐	☐	☐
Poor service quality i.e. Unstable network, data loss, broken links.	☐	☐	☐	☐	☐
Privacy i.e. Surveillance, background checks, data misuse	☐	☐	☐	☐	☐
Accessibility of information by other agencies.	☐	☐	☐	☐	☐
Control over information i.e. Maintaining full control of data by the organisation	☐	☐	☐	☐	☐

18. **Relevant literature indicates that there are certain barriers to the processes involved in the development and implementation of electronic government in developing economies around the world. some of these barriers have been identified below. Please select in order of importance the barrier(s) you feel may apply to your organisation's e-government development and implementation.**

	Very Important	Important	Neutral	Unimportant	Very Unimportant
Awareness i.e. Organisational, Societal, Cultural.	☐	☐	☐	☐	☐
Readiness i.e. Literacy, ICT infrastructure, Computer availability, Internet connectivity	☐	☐	☐	☐	☐
Resistance to change among organisational departments	☐	☐	☐	☐	☐
Lack of government policy and legislative support	☐	☐	☐	☐	☐
High level of investment cost to participate in e-government.	☐	☐	☐	☐	☐
Complexity in understanding the system, i.e. management technical ability	☐	☐	☐	☐	☐
Partnership and collaboration, i.e. Public/Private partnership, Network building	☐	☐	☐	☐	☐
Consistent e-government strategy, i.e. Vision and mission.	☐	☐	☐	☐	☐
Lack of good leadership and motivation, influence, and support	☐	☐	☐	☐	☐
Privacy and security issues	☐	☐	☐	☐	☐
Data protection issues	☐	☐	☐	☐	☐

19. **other barrier(s): what other barriers do you think your organisation might encounter while implementing e-government? please specify below**

20. Five major 'Network Processes' have been identified in relevant E-government literature as vital components to the successful development and implementation of any 'Provider Network'. These components are: Shared vision, Network structure, Incentive design, Institutionalisation, and Network partner selection.

SHARED VISION: this is mainly the articulation of goals and objectives for all partners participating in a 'Network arrangement'.

In your opinion, kindly specify the level of importance to your organisation the underlisted factors towards arriving at a 'shared vision' in a Network.

	Very Important	Important	Neutral	Unimportant	Very Unimportant
Negotiation	☐	☐	☐	☐	☐
Consensus	☐	☐	☐	☐	☐
Co-operation	☐	☐	☐	☐	☐
Effective communication	☐	☐	☐	☐	☐
Collaboration	☐	☐	☐	☐	☐

21. Others: please enumerate other factors you feel is important for your organisation to consider in arriving at a 'shared vision' within a 'Network arrangement'.

22. NETWORK STRUCTURE: this involves the composition of actor(s) that makes up the entire 'Provider Network'.

In your opinion, please specify the level of importance of the following approaches to your organisation when making changes to the 'Network structure'.

	Very Important	Important	Neutral	Unimportant	Very Unimportant
Gradual introduction of change	☐	☐	☐	☐	☐
Negotiated change	☐	☐	☐	☐	☐
Mutually supportive change	☐	☐	☐	☐	☐
Spontaneous change	☐	☐	☐	☐	☐
Continuous change	☐	☐	☐	☐	☐

23. Others: please enumerate other factors that you feel might be important to your organisation when considering making changes to the structure of an existing 'Network arrangement'.

24. INCENTIVE DESIGN: this involves a mixture of methods to encourage compliance with the 'Network' goals and objectives.

In your opinion, please specify the level of importance to your organisation the following 'Control mechanism' to encourage compliance by all actors within a 'Network arrangement'.

	Very Important	Important	Neutral	Unimportant	Very Unimportant
Penalties	☐	☐	☐	☐	☐
Persuasion	☐	☐	☐	☐	☐
Coercion	☐	☐	☐	☐	☐
Contracts	☐	☐	☐	☐	☐

25. Others: what other 'Control mechanism' do you feel your organisation may employ to encourage compliance with the rules and regulation of a 'Network arrangement'?

26. INSTITUTIONALISATION: internalisation of the rules and procedures of network goals and objectives. In your opinion, do you believe that the internalisation of rules and procedures of network objectives should be enforce in every organisation participating in a network arrangement?

☐ Yes

☐ No

☐ Other, please explain.

27. NETWORK PARTNER SELECTION: identification of actors who can play critical roles in the 'Network'.

In your opinion, please specify the level of importance of the following actors to the selection of partners in your 'Network'.

	Very Important	Important	Neutral	Unimportant	Very Unimportant
Reputation of actor(s) in a 'Network'.	☐	☐	☐	☐	☐
Autonomy of actors	☐	☐	☐	☐	☐
Harmony of Network interests	☐	☐	☐	☐	☐
Collective mind of various actors in the Network	☐	☐	☐	☐	☐
Resource availability	☐	☐	☐	☐	☐
Trust	☐	☐	☐	☐	☐

28. Other(s): please enumerate other factors you feel might be necessary in the selection of partners for a Network.

29. INTRA-ORGANISATION FACTORS:

LEADERSHIP: in your views, how do you think managerial capability can influence the development and implementation of E-government initiatives in your organisation?

30. GOALS/OBJECTIVES: who is responsible for championing the development and implementation of E-government initiatives in your organisation?

31. FUNDING: In your views, do you think financial capability of your organisation is a major factor in developing and implementing E-government in your organisation?

32. ATTITUDE: how would you describe your manager(s) attitudes towards Information Communication Technology (ICT)?

- ☐ Very Good
- ☐ Good
- ☐ Neutral
- ☐ Bad
- ☐ Very Bad

33. How would you describe the attitudes of most of the employees in your organisation towards using ICT?

- ☐ Very Good
- ☐ Good
- ☐ Neutral
- ☐ Bad
- ☐ Very Bad

34. Please rank the following factors in other of importance to your organisation when considering new programmes.

	Very Relevant	Relevant	Neutral	Irrelevant	Very Irrelevant
LEADERSHIP	☐	☐	☐	☐	☐
ATTITUDE	☐	☐	☐	☐	☐
GOALS/OBJECTIVES	☐	☐	☐	☐	☐
FUNDING	☐	☐	☐	☐	☐

35. EXTERNAL FACTORS:

POLITICAL: in your views, has there been any encouragement or pressures from the government or its agencies that has influenced the development and implementation of E-government in your organisation?

- ☐ Yes
- ☐ No
- ☐ other, please explain

36. ECONOMIC: do you recieve any sort of financial assistance from the government or its agencies to support the development and implementation of E-government initiatives in your organisation?

- ☐ Yes
- ☐ No
- ☐ other, please explain

37. LEGISLATION: has there been any legislation or legal framework on the use of ICT in public sector establishments that has influenced how your organisation participates in E-government?

- ☐ Yes
- ☐ No
- ☐ other, please explain.

38. CRITICAL MASS: are you aware of any other public agencies participating in E-government development and implementation initiatives?

- ☐ Yes
- ☐ No

39. What other external factors have you encountered while participating in E-government programmes in your organisation?

40. CHANGE MANAGEMENT:

Are you familiar with the term 'CHANGE MANAGEMENT' in the context of people management within an organisation?

- ☐ **Yes**
- ☐ **No**
- ☐ **other, please explain.**

41. Which of the following statements best describes how CHANGE is managed in your organisation? The

- ☐ **organisation exists in a state of continuous change**
- ☐ **The organisation exists in a long period of stability, with little change as at when required Departments**
- ☐ **within the organsation deals with CHANGE separately as it sees fit**
- ☐ **The organisation does not believe in CHANGE, so it does business as usual**

42. Please rank the following requirements about CHANGE in order of importance to your organisation. (1 = most important, 9= least important).

	1	2	3	4	5	6	7	8	9
Understand reason why CHANGE is happening in the organisation									
Conscious that key personnel are involved in the CHANGE process	☐	☐	☐	☐	☐	☐	☐	☐	☐
Believe that everyone is focused on the goals and objectives of the CHANGE									
Being able to take ownership and influence the details of the CHANGE	☐	☐	☐	☐	☐	☐	☐	☐	☐
Knowing that some is ultimately responsible for the overall CHANGE project									
Getting adequate assistance from the project owners through supportive environment	☐	☐	☐	☐	☐	☐	☐	☐	☐
Recognise that the CHANGE project is being implemented by people with the necessary skills in a clear and consistent manner.									
Understands that the CHANGE project recognises the organisation's broader dependencies and gives consideration to people, process, and infrastructure.	☐	☐	☐	☐	☐	☐	☐	☐	☐
Appreciation of how the CHANGE project will take place and be properly communicated to everyone involved									
Believes that the outcome of the CHANGE project would be beneficial to everyone	☐	☐	☐	☐	☐	☐	☐	☐	☐

43. Academicians and scholars have identified six 'change approaches'. To what extent do you agree or disagree with the following statements on CHANGE?

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Education and communication					
Participation and involvement	☐	☐	☐	☐	☐
Facilitation and support					
Negotiation and agreement	☐	☐	☐	☐	☐
Manipulation and co-option					
Explicit and implicit coercion	☐	☐	☐	☐	☐

44. Relevant literature identifies four major reasons for resistance to change. Please indicate to what extent you agree or disagree with the following statements below:

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Many people are concerned about the implementation of 'change' in their organisations because it affects them.	☐	☐	☐	☐	☐
Many people are concerned about 'change' in an organisation because of the success it would bring to the organisation	☐	☐	☐	☐	☐
Change in an organisation is often conducted with inadequate communication with the employees	☐	☐	☐	☐	☐
Many people in an organisation resist change due to personal opinions or assessments of the situation	☐	☐	☐	☐	☐
People generally have a low tolerance to CHANGE.	☐	☐	☐	☐	☐

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45. ACTORS INVOLVED IN E-GOVERNMENT DEVELOPMENT:
Can you please map the actor(s) you believe mostly influence E-government development at the initiation stage.

	Government	Technology	Organsation	User
Telecommunication and Internet connectivity	☐	☐	☐	☐
Support infrastructure	☐	☐	☐	☐
Use of local content	☐	☐	☐	☐
Legislation and regulations	☐	☐	☐	☐
E-government strategy and policy	☐	☐	☐	☐
E-government financial cost	☐	☐	☐	☐
Education and skilled labour	☐	☐	☐	☐
Payment systems	☐	☐	☐	☐
International trade and communication	☐	☐	☐	☐
Culture, religion, and values	☐	☐	☐	☐
ICT awareness	☐	☐	☐	☐
Information champion	☐	☐	☐	☐

46. Please enumerate other actors or activities you feel may be involved in E-government at the initiation stage of development.

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47. Please map the actor(s) you believe will mostly influence E-government during the implementation phase of an E-government project.

	Government	Technology	Organsation	User
Training and education	☐	☐	☐	☐
Online transaction security	☐	☐	☐	☐
Culture, religion, and values	☐	☐	☐	☐
Payment systems	☐	☐	☐	☐
Change business culture	☐	☐	☐	☐
Use specialised workforce	☐	☐	☐	☐
Accessibility	☐	☐	☐	☐
Monitor and updating	☐	☐	☐	☐
Online promotions	☐	☐	☐	☐
Customer satisfaction and trust	☐	☐	☐	☐
Customer evaluation and feedbacks	☐	☐	☐	☐

48. Please state any other actors you feel may be involved in the implementation stage of E-government projects in your organisation.

49. GOOD PRACTISE GUIDELINES

How important are the following statements considered by your organisation as 'good practise guidelines' at the development stage of E-government?

	Very Important	Important	Neutral	Unimportant	Very Unimportant
A simple project design with clear development objectives	☐	☐	☐	☐	☐
Excellent understanding and support from the executing agency	☐	☐	☐	☐	☐
Adequate political support	☐	☐	☐	☐	☐
Ongoing support and maintenance	☐	☐	☐	☐	☐
Strong user demand	☐	☐	☐	☐	☐
Interest by private sector	☐	☐	☐	☐	☐
Very careful selection of appropriate technology for the project	☐	☐	☐	☐	☐
Use local content as part of the development process	☐	☐	☐	☐	☐
Tailor project to the host environment	☐	☐	☐	☐	☐
Availability of necessary support infrastructure for the development process	☐	☐	☐	☐	☐

50. Please enumerate other factors that you consider as 'good practise guidelines' at the development phase of any E-government project.

51. How important do you consider these factors as 'good practise guidelines' for E-government during implementation stage at your organisation?

	Very Important	Important	Neutral	Unimportant	Very Unimportant
Focus on sustainability	☐	☐	☐	☐	☐
Controling cost of implementation	☐	☐	☐	☐	☐
Achieving high level of structural completeness and operational efficiency	☐	☐	☐	☐	☐
Allowing stakeholders imput in the implementation process	☐	☐	☐	☐	☐
Ensuring transparency in the implementation process	☐	☐	☐	☐	☐
Collaborating with other government agencies during the implementation process	☐	☐	☐	☐	☐
Adhere to legal requirements and procedures	☐	☐	☐	☐	☐

52. Please state briefly, other factors that you feel are important to 'good practise guidelines' for E-government planning and implementation

53. How important do you consider these factors as 'good practise guidelines' for E-government at the post-implementation stage?

	Very Important	Important	Neutral	Unimportant	Very Unimportant
Training and capacity building	☐	☐	☐	☐	☐
Policy and regulation	☐	☐	☐	☐	☐
Structure and commitment	☐	☐	☐	☐	☐
Benefit assessment (Financial, Social, Environment)	☐	☐	☐	☐	☐
Technology (Reviews and updates)	☐	☐	☐	☐	☐
Executing agency support and maintenance	☐	☐	☐	☐	☐
Adequate and skilled staffing	☐	☐	☐	☐	☐
Budget and financial support	☐	☐	☐	☐	☐
Continous service availability	☐	☐	☐	☐	☐
Awareness and usage	☐	☐	☐	☐	☐

54. Please state the three most import post-implementation 'good practise guidelines' that your organisation will follow for its E-government project.

55. CLOSING QUESTIONS:
In your opinion, what are the most important factors that you feel are impeding and facilitating the development and implementation of E-government in the public sector organisations in Nigeria?

56. In your opinion, what incentives to you feel will encourage higher level of participation in E-government initiatives in Nigeria?

57. Do you believe in 'collaborative participation'?

- ☐ **Yes**
- ☐ **No**
- ☐ **other, please explain.**

58. How would you summarise your experience of E-government in Nigeria?

Thank you very much for taking part in this survey.

ELECTRONIC GOVERNMENT RESEARCH QUESTIONNAIRE

Thank you very much for completing this survey.

PART B

e-GOVERNMENT USER SURVEY

ELECTRONIC GOVERNMENT (E-GOV) USER

This survey questionnaire is directed to the general public in Nigeria. However, Nigerians in diaspora may take part using ONLY the ONLINE version of the survey.
The purpose of the survey is to enquire about the public opinion on the use of electronic government (e-Gov.) in Nigeria.
The questionnaire is annoymous therefore your name, date of birth, and address in NOT required.
Any information given in this questionnaire is for research purpose ONLY.
You are under NO obligation to participate. You may withdraw at any time without notice. However, I will be glad if you can complete the questionnaire.

*** 1. Would you like to freely participate in this survey?**
- ☐ **Yes**
- ☐ **No**

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2. What is your gender?
- ☐ **Male**
- ☐ **Female**

3. What is your age group?
- ○ **16 - 20**
- ○ **21 - 30**
- ○ **31 - 40**
- ○ **41 - 50**
- ○ **Above 50**

4. Which state in Nigeria do you presently live in? If you live outside Nigeria, please specify the country in the box provided.

[ ]

5. What is the highest level of education you have attained?
- ○ **No formal education**
- ○ **Primary school**
- ○ **Secondary school**
- ○ **University degree**
- ○ **Post graduate degree**

6. Are you in any form of employment?

- ○ Yes
- ○ No

7. In the box below, please state or describe your form of employment

8. What is the level of income from your employment? please select a category below.

- ○ Below 20,000 Naira
- ○ 20,000 - 50,000 Naira
- ○ 51,000 - 100,000 Naira
- ○ Above 100,000 Naira

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9. Which of the following electronic device do you have?

- ☐ Desktop Personal computer
- ☐ Laptop Computer
- ☐ Tablet Computer
- ☐ Phablet
- ☐ Mobile Phone

10. Is your eletronic device connected to the Internet?

- ○ Yes
- ○ No

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11. How do you connect your electronic device to the Internet?

- ☐ I have an Internet Broadband connection at home
- ☐ I use mobile data on my phone to connect to the Internet
- ☐ I connect to the Internet at my place of work
- ☐ I use the cyber cafe to get on the Internet
- ☐ other(s), please specify below.

12. What do you use your electronic device (Computer) for?

- ☐ I use my computer for video gaming purposes
- ☐ I use my computer for work related purposes
- ☐ I use my computer for communication purposes
- ☐ I use my computer for business purposes
- ☐ Other(s), Please specify in the box below

13. How often do you get on the Internet?

- ○ At least once a day
- ○ At least once a week
- ○ Once every two weeks
- ○ At least once a month
- ○ I am constantly online with my electronic device.

14. What do you do or search for on the Internet?

- ☐ I use the Internet for social networking
- ☐ I use the Internet to do my business or work
- ☐ I use the Internet to conduct research
- ☐ I use the Internet to pay my bills (i.e. Tax, fines, utilities.)
- ☐ I use the Internet for casual browsing.
- ☐ I use the Internet for shopping.
- ☐ Other(s), Please specify in the box below

15. How would you describe your level of satisfaction with your Internet connection? Please select from the options below all that applies to you.

	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied
Financial cost	☐	☐	☐	☐	☐
Internet service quality	☐	☐	☐	☐	☐
Internet services customer support from the provider	☐	☐	☐	☐	☐

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16. Have you heard of the term 'Electronic Government' (e-Government)?

- ○ Yes
- ○ No

17. Are you aware of the services e-government offers to the general public?

- ○ Yes
- ○ No

18. The Nigerian government currently delivers a large number of public services through the Internet. Which one of the following e-government online services have you been using?

- Online self-assessment tax forms
- Applying for international passport
- Applying or updating drivers' licence
- Applying for jobs
- Registering for exams (Jamb, Waec, GCE)
- Checking exam results (Jamb, Waec, GCE)
- Registering a company
- Other(s), Please specify in the box below

19. Are you confortable using your personal information to transact business online with Nigerian government portals?

- Yes
- No

20. Which of the following Internet security issues are you concerned about? Please select all that concerns you by indicating the level of importance to you.

	Very Important	Important	Neutral	Unimportant	Very Unimportant
Privacy (Surveillance issues)					
Hacking (Unauthorised access to data and information)					
Identity theft					
Trust (Control over data and information)					

21. Please indicate your level of satisfaction with the attributes of ANY Nigerian government portal(s) you have visited.

	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied
Appropriateness of customer interface and usability	☐	☐	☐	☐	☐
Accuracy and sufficiency of information	☐	☐	☐	☐	☐
Orderly organisation of website contents	☐	☐	☐	☐	☐
Functionality of web links	☐	☐	☐	☐	☐
Consistency of style and presentation throughout the website	☐	☐	☐	☐	☐
Timeliness of data and information	☐	☐	☐	☐	☐
Online service delivery 24/7 through multiple channels	☐	☐	☐	☐	☐
Clarity, readability, and appropriateness of text fonts and size	☐	☐	☐	☐	☐
Correctness of spelling and grammar	☐	☐	☐	☐	☐
Easiness of nagivation within and between websites	☐	☐	☐	☐	☐
Pleasantness and accessibility of overall contents	☐	☐	☐	☐	☐

22. Do you have a Nigerian national identity card?

- ○ Yes
- ○ No

23. Do you have a permanent voters card (PVC)?

- ○ Yes
- ○ No

24. Did you register for the 2015 general elections in Nigeria?

- ○ Yes
- ○ No

25. Did you vote using your PVC in the 2015 general elections in Nigeria?

- ○ Yes
- ○ No
- ○ Other, please explain in the box below

e-Gov. User

Thank you very much for taking time to complete this survey.