MODEL FOR E-GOVERNMENT INITIATIVE IN PUBLIC SECTOR IN JORDAN

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Abstrak

E-kerajaan telah menarik perhatian secara global sejak ia diperluaskan dalam perkhidmatan awam melalui penggunaan teknologi maklumat dan komunikasi (ICT). Ia memberi akses kepada maklumat, meningkatkan ketelusan dan kecekapan. Kebanyakan kerajaan berminat untuk melaksanakan inisiatif e-kerajaan yang jaya. Walau bagaimanapun, pelaksanaan e-kerajaan bukanlah satu tugas yang mudah kerana negara membangun tidak dapat melaksanakan model e-kerajaan sedia ada yang sebahagian besarnya dibangunkan dalam konteks negara maju.Terdapat bukti yang menunjukkan kebanyakan projek e-kerajaan di negara membangun seperti Jordan mengalami masalah selepas fasa perlaksanaan. Oleh yang demikian, objektif kajian ini adalah untuk membangunkan model pelaksanaan e-kerajaan bagi sektor awam di Jordan. Dalam kajian ini, data telah dikumpul melalui temubual tidak berstruktur. Tiga puluh orang responden yang terlibat dalam projek e-kerajaan seperti pengurus, pengurus besar dan pembuat keputusan dari peringkat lain telah dipilih daripada tiga kementerian di Jordan iaitu Kementerian Teknologi Maklumat dan Komunikasi, Kementerian Pendidikan dan Kementerian Buruh. Faktor kejayaan awalan untuk pelaksanaan e-kerajaan di Jordan telah dikenal pasti dan dianalisis secara kualitatif. Teknik *Delphi* juga digunakan untuk menentukan dan mengesahkan faktor kejayaan kritikal (CSFs). Sebuah model inisiatif e-kerajaan Ali, Syazwan & Ruzaini yang baru telah dibangunkan dalam kajian ini. Model ini mempunyai empat peringkat: (1) kemunculan dan penyebaran maklumat; (2) komunikasi dua hala; (3) integrasi dan (4) E-demokrasi. Dapatan kajian juga telah mengenalpasti tujuh CSF yang perlu diambil kira untuk melaksanakan model ini, iaitu sokongan pengurusan atasan, visi dan strategi, pembiayaan, infrastruktur teknologi maklumat (IT), keberkesanan penggunaan komputer, kesedaran dan penolakan terhadap perubahan. Kajian ini menyumbang kepada bidang pengetahuan dalam Teori Teknikal Social yang membawa kepada pembangunan model inisiatif e-kerajaan bagi sektor awam di Jordan. Data empirik dari kajian ini boleh memberi input kepada agensi kerajaan untuk merancang, mereka bentuk dan melaksanakan projek ICT pada masa hadapan di Jordan.

Kata Kunci: E-kerajaan, Model Inisiatif E-kerajaan, Faktor Kejayaan Kritikal, Teknik *Delphi*.

Abstract

E-government has become a global interest since it extended the public services through information communication technology (ICT) to allow access to information, improve transparency and efficiency. Many governments are interested to implement successful e-government initiatives. However, e-government implementation is not a simple task since the developing countries cannot directly adopt the implementation of e-government model which is mainly built in the context of developed countries. Previous studies have shown that many e-government projects in developing countries, like Jordan have encountered various problems after implementation phase. Hence, the objective of this study is to develop an e-government initiative model for the public sector in Jordan. In this study, unstructured interviews were conducted as a method for collecting the data. Thirty respondents involved in e-government projects such as managers, general managers and other levels of decision makers were selected from three Jordanian ministries namely the Ministry of Information and Communication Technology, Ministry of Education and Ministry of Labour. The initial success factors for e-government initiatives in Jordan were identified and analyzed qualitatively. Delphi technique was also used to determine and validate the critical success factors (CSFs). Ultimately, a novel Ali, Syazwan & Ruzaini's e-government initiatives model for has been developed in this research. The model has four stages: (1) Emerging and Information Dissemination; (2) Two-Way Communication; (3) Integration and (4) E-democracy. The findings also revealed seven CSFs that should be taken into account to implement the e-government model which include top management support, vision and strategy, funding, information technology (IT) infrastructure, user computer efficacy, awareness and resistance to change. This study contributes to the body of knowledge in Socio Technical Theory (STT) toward the development of e-government initiatives model for public sector in Jordan. The empirical data from the study may provide input for government agencies to plan, design and implement future ICT projects in Jordan.

Keywords: E-government, E-government Initiatives Model, Critical Success Factors (CSF), Delphi Technique.

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List of Abbreviations

CSFs	Critical Success Factors
MoICT	Ministry of Information and Communication Technology
IT	Information Technology
E-government	Electronic government
CS	Computer systems
MIS	Management Information Systems
QSR	Qualitative Solutions & Research
G2G	Government-to-Government
G2B	Government-to-Business
G2C	Government-to-Citizen
G2E	Government-to-Employee
ICT	Information and Communication Technology
IS	Information Systems
STT	Social Technology Theory
ICDL	International Computer Driving License
SPSS	Statistical Package for Social Sciences
CPD	Continuing Professional Development
UK	United Kingdom
USA	United States of America
PMO	Program Management Office
PKI	Public Key Infrastructure
SGN	Secure Government Network
GNB	Government National Backbone
UN	United Nation
ASPA	American Society for Public Administration
NGO	Non-Governmental Organizations

CHAPTER ONE
INTRODUCTION

This chapter describes the broad overview and explains the purpose of the study. This chapter is divided into several sections which begin with an overview of the research background, problem statement, research questions and research objectives. In addition, the explanation on the research scope, research strategy, research contributions and the overall thesis organization has been provided, which assist in understanding the research groundwork.

1.1 Background

The rapid developments in ICT have a profound impact on organizations, governments and society. It also has promoted emerging fields such as e-commerce, e-learning, e-health and e-government as a way to disseminate information to public. E-government is one of interesting ICT applications which has been identified to be an important field of research (Alshehri & Drew, 2010). E-government can be defined as the use of ICT, especially Internet-based applications, phones, and other digital means to deliver e-government services (Basu, 2004; Rahman, 2007).

The World Bank (2011) on the other hand has defined e-government as:

> *"The use of information technologies (such as Wide Area Networks, the Internet, and mobile computing) by government agencies has the ability to transform relations with citizens, businesses, and other arms of government. These technologies can serve a variety of different ends: better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, or more efficient government management. The resulting benefits can be less corruption, increased transparency, greater convenience, revenue growth, and/or cost reductions".*

The concept of the e-government was first introduced in 1979 by Simon Nora and Alain Minc in their report (Duquenoy et al., 2005). By the end of the 1990s, e-government initiatives had become a global interest since it opens dynamic and competitive markets, accelerate working process and favor economic growth in general (Chen et al., 2013; Al-Rashidi, 2010; Sagheb-Tehrani, 2007). In addition, e-government related initiatives play an important role in implementing good governance, strengthening the existing relationships, and building new partnerships within the civil society (Prajapati & Sharma, 2013; Abdalla, 2012). In regard to these benefits, developed countries such as the United States of America (USA), Canada, the United Kingdom (UK), and Australia have initiated the e-government projects, and are now reaping the initial gains from their early implementation of e-government projects (Jantjies, 2010; Chen et al., 2006). Due to these trends, many Arab nations also have aimed to fully utilize the ICT in government agencies in order to provide better services and engage with their citizens (Chatfield & Alhujran, 2009).

Despite the advantages of e-government, it is a complex system mainly involves a series of activities, represents different interest of stakeholders and also serves diverse groups of sectors including people and organizations in various fields (Grant, & Chau, 2006). Thus, e-government should be implemented properly and can be considered as a sophisticated system that connects the government with businesses, citizens, and other stakeholders using computers and the internet to achieve the desired goals, objectives and benefits (Evans & Yen, 2006; Abdalla, 2012). Most of e-government researchers have classified e-government initiatives into three major

categories: (1) Government-to-Government (G2G), (2) Government-to-Business (G2B), and (3) Government-to-Citizen (G2C) (Hwang & Syamsuddin, 2008; Al-Adawi et al., 2005; Seifert, 2003). These categories basically depend on the different needs of the stakeholders. In addition to these categories, another category has emerged which is known as Government-to-Employee (G2E), as e-government extensively deals with people who work within the system (Alshehri & Drew, 2010; Al Nagi et al., 2009).

Generally, there are different ways of implementing e-government in order to provide better services for citizens. The differences in e-government implementation around the world indicate that countries normally seek for various kinds of benefits and follow different objectives (Fgee & Alkallas, 2013). However, proper e-government project is usually expected when the administrative authority effectively enhances economic and political activities, thereby improving the management affairs of the country at all levels (Åkesson, 2008). E-government has two key objectives (1) internally focused processes (operations), and (2) externally focused services. Internally focused processes mainly facilitate rapid, transparent, accountable, efficient, and effective public administration activities, which resulting in significant cost savings per transaction for the government (Basu, 2004; Backus, 2001). Meanwhile, the externally focused services provide satisfactory services to the public, business organizations, and other agencies at any time and without keeping customers wait too long in long queues (Bhatia et al., 2009). This service also simplifies interactions between different agencies by offering various government online services.

Currently, e-government is one of the modernization efforts undertaken by many countries in achieving knowledge-based economy to deal with globalization and liberalization. Although a few countries have commendably implemented the e-government services, many other countries have found it difficult to deal with various aspects of the e-government implementation plans (Fgee & Alkallas, 2013). In this regard, many e-government projects had encountered different problems, failed to meet their objectives and were not well executed especially in developing countries (Abdalla, 2012). Hence, several researchers have studied factors that contribute to failures of e-government's implementation such as Misra (2009), Dada (2006) and Heeks (2005), while others such as Al-Azri et al. (2010) and Wood-Harper et al. (2004) have focused on the factors that lead to success of e-government's implementation.

Dada (2006), Heeks (2002, 2003, 2005), Yong Hu et al. (2004), Kumar and Best (2006), Hwang and Syamsuddin (2008), Schuppan (2009), Stanforth (2010), Wahid (2011) as well as Shajari and Ismail (2012) have classified e-government's initiatives outcomes into three main types: (1) total failure, (2) partial failure and (3) success. Total failure indicates the initiatives were never implemented or the projects were immediately abandoned, while partial failure point to the case where significant goals for the e-government initiative were not achieved and/or there were irrelevant objectives or outcomes (Heeks, 2005; Hwang & Syamsuddin, 2008). Success class outcome on the other hand refers to scenario whereby most stakeholder groups managed to achieve their outline goals and did not experience any inappropriate outcomes (Venkatesh et al., 2013; Dada, 2006).

Based on this outlined classes, these studies have discovered that approximately 85% of e-government implementations has failed to achieve their objectives, of which 35% is a total failure, 50% is partial failure, and only 15% is fully successful systems (Jain & Kesar, 2011; Heeks, 2003).Thus, the low rate of success rate urges for proper planning and implementation of e-government system in developing countries (Wahid, 2011;Stanforth, 2010; Yong Hu et al., 2004). Regardless the benefits and acceptance of this new technology (e-government), many governments in the developing countries have encountered a lot of problems and challenges in rolling out a fully functional e-government system (Axelsson & Melin, 2012). As a result, only few countries have achieved partial success in e-government's implementation, while most of e-government initiatives have not been fully implemented in many parts of the world (Mishra, A. & Mishra, D., 2012; Heeks, 2003).

This study will examine the implementation of e-government initiatives in Jordan as a one from developing countries. Jordan started to implement e-government in November 2000 (Al-Onizat et al., 2013). E-government initiative is promising for Jordan to move forward in the twenty-first century to enable it to bridge the gap between Jordan and it is the more developed counterparts within the region (Obeidat & Abu-Shanab, 2010). Jordan implements e-government initiatives by adopting developed countries models, the model called the E-government Maturity Model which is based on the UK's E-government Maturity Model, where this model describes the implementation of e-government involving four stages: Emerging, Enhanced, Transactional and Connected.

Implementation of e-government in Jordan suffers from many problems, where the process of e-government implementation in Jordan still in early stage (Elsheikhet al., 2008; Al-Omari, 2006). The process of implementation is between stage 2 and stage 3 from UK's E-government Maturity Model, section 2.7.3 (page: 88) give more detail about e-government in Jordan.

Hence, there are several failed e-government initiatives which demonstrate the need for competence to develop a successful e-government system due to the complexity of factors that may affect the development process. Therefore, this in depth study is required to determine the significant factors that could yield to support the e-government implementation models for better success rate of e-government projects.

1.2 Problem Statement

The implementation of e-government initiatives in most developing countries are still at the initial stages and has been improperly planned (Al-Marabeh & AbuAli, 2010). This has caused high failure rate of e-government systems. The high failure rate of e-government initiative is due to the misleading factors in the existing models. According to Abdalla (2012); Chaijenkij (2010); Chen et al. (2006); Heeks and Bailur (2007); Hwang and Syamsuddin (2008); and Yildiz (2007), many developing countries have implemented e-government initiative based on the theories and experiences of the developed countries without adjusting those models to their particular needs. This has contributed to the high failure rate since the models are not applicable in developing countries due to the different context and set of requirements (Wahid, 2011).

This has also led to the lack of compatibility in the current and future e-government systems (Heeks, 2005; Wagner et al., 2003; Morshidi & Hamid, 2010), that lead to the formation of gaps in implementing e-government initiatives in the developing countries. However, due to the increase of citizens' demand for e-government implementation, most governments re-implemented previously developed systems design which was constructed for developed countries (Sarkar, 2010). Developing e-government systems by excluding the empowerment of citizens has resulted in its failure to sustain operation over a long period of time (Sang & Lee, 2009) since developing countries requires unique adoption and adaptation of e-government models (Nabafu & Maiga, 2012).

Furthermore, e-government models of developed countries require modifications to suit the needs of developed nation (Evangelia & Alexandra, 2012). There is a huge mismatch between the model and the location of the implementation, in terms of physical, cultural, economic, and various other contexts (Heeks, 2003; 2005; Dada, 2006; Abuali et al., 2010) addressed by Wahid (2011) as the Hard-Soft Gap. The factors refer to technology, tools, infrastructure, information, security and quality of the services (Heeks, 2005); meanwhile, the soft factors include culture, politics, and education. Therefore, these factors need to be systematically investigated before a successful e-government can be implemented in a developing country like Jordan.

The failure of e-government in developing countries is also due to the lack strategies used in implementing effective e-government systems. Chen et al. (2006), Ellu

(2009) and Sensuse and Lusa (2011) have discussed the existing gap that occurs between the design of implementation strategies and the reality of its application. E-government strategy is a key factor in the implementation of e-government initiatives (Sarkar, 2010). It requires countries to design and develop a strategic plan in order to identify and develop organizational structures, determines methods of interacting with citizens and businesses, means to reduce costs, and levels of business processes (Evangelia & Alexandra, 2012). For developing countries to succeed in implementing e-government projects, they need to specifically design and organize practical infrastructure besides having practical strategies that align with their own specific requirements (Gil-García & Pardo, 2005).

This study attempts to identify the critical success factors based on the Social Technical Theory (STT) for successful e-government implementation to explore the organizational, technology and people factors. The factors extracted from the practices and experiences learnt from the implementing agencies in Jordan can help to provide empirical evidence to better understand and improve implementation of e-government services.

1.3 Research Questions

The study seeks to develop model for e-government implementation in Jordan based on their critical success factors. Therefore, several questions need to be addressed in order to achieve the purpose of this study. The research questions are as:

1. How do the identified critical success factors affect the implementation of e-government initiatives in Jordan?

2. How do these critical success factors help in the success of e-government initiatives implementation in Jordan?

1.4 Research Objectives

The main objective of this research is to develop model for e-government implementation in Jordan. Given the main objective of this study, the specific objectives are:

1. To identify the success factors for the implementation of e-government initiatives in Jordan.

2. To verify the identified critical success factors for the implementation of e-government initiatives in Jordan.

1.5 Scope of Study

This research started with determining the CSFs which are required to develop model for e-government implementation of initiatives in Jordan based on the perspectives of those government officers who were involved in the e-government implementation. In attaining this aim, based on the Socio Technical Theory (STT), the general success factors were mined from the literature reviews. The popular and common e-government implementation models were selected and compared to

propose a model for Jordan. The e-government development model is based on Satyanarayana (2006) who states that the theoretical stages of development of e-government in a country starts with Information, followed by Interaction and Transaction, ending with Integration.

This study was conducted on public sector in Jordan, three ministries have participated in this study namely, (1) The Ministry of Information and Communication Technology (MoICT), (2) The Ministry of Education and (3) The Ministry of Labour. The MoICT has been selected in this study because the Ministry is responsible to facilitate the exchange of the information between departments and government ministries (Government to Government), while The Ministry of Education is responsible to provide the services to the students and citizens (Government to Citizens (G2C)). Finally, Ministry of Labour is included in this study as this ministry offering the exchange the information between government ministries and business (Government to Business (G2B)).Hence, by choosing these three ministries, this study managed to investigate e-government's initiatives from different perspective: Government to Government (G2G), Government to Citizens (G2C) and Government to Business (G2B). In addition, as these ministries involved a range of employees, other category (Government to Employees (G2E)) can also be examined.

The data for this study was collected from thirty respondents who were managers, senior managers and decision makers from the three Jordanian ministries which have implemented e-government system. According to the Rockart (1978) managers,

senior managers and decision makers have been included in this study since they are the important people who have played key roles in determining the CSFs of e-government initiatives. The managers were also able to share the knowledge and experiences in implementing the e-government initiatives.

1.6 Research Strategy

The research is carried out to achieve the outlined objectives in Section 1.4 (Page: 10) through a strategy which is presented in Figure 1.1 (Page: 15). It consists of three main stages, namely Stage One, gathers and discovers e-government success factors as well as identifies and analyses popular e-government implementation models. Stage Two, Extract and verify the CSFs e-government implementation for Jordan. Stage three, validating the e-government implementation model with CSFs.

In the Stage One, two main tasks have been accomplished. Task 1and Task 2 of the first stage thoroughly reviewed the literature and analyzed the most popular e-government implementation models in order to identify the general success factors of e-government implementation in the developing countries. The analysis included the stages, facilities and processes for every stage in all these models. Accordingly, success factors, processes, facilities, weaknesses and strengths for all popular e-government's implementation models were identified and explained in detail in Section 2.4 (Page:12).

Then, Stage Two extract and verify the CSFs for e-government implementation in Jordan this stage involves Task 3, 4, 5 and 6. Task 3 is meant to conduct an empirical

research in order to determine the initial critical success factors for e-government's implementation in Jordan. At this point, the data is collected from Jordan public sectors by interviewing the thirty respondents who are managers, senior managers and decision makers from three different Jordanian ministries. Task 4 is mainly aimed to analyze the data collected from Task 3 using Nvivo analysis in order to obtain the initial success factors for e-government's implementation in Jordan, detail description is given in Section 4.2 (Page:138). Task 5 is aimed at selecting and validating the success factors that are critical for successful e-government's implementation in Jordan, detail description is given in Section 4.3 to Section 4.5 (Page:144). These CSFs will then be verified in Task 6 through the experts review using Delphi techniques, Detail description is given in Section 4.6 to Section 4.8 (page: 194).

In the final stage, this stage involves Task 7, which embeds the CSFs with the conceptual E-government implementation model. Task 7 is aimed in this stage where the CSFs were embedded in the E-government implementation model to get the final draft for the model, where the extracted CSFs will be used to support the model. Section 4.9 (Page: 212) offers detailed information on Task 7.

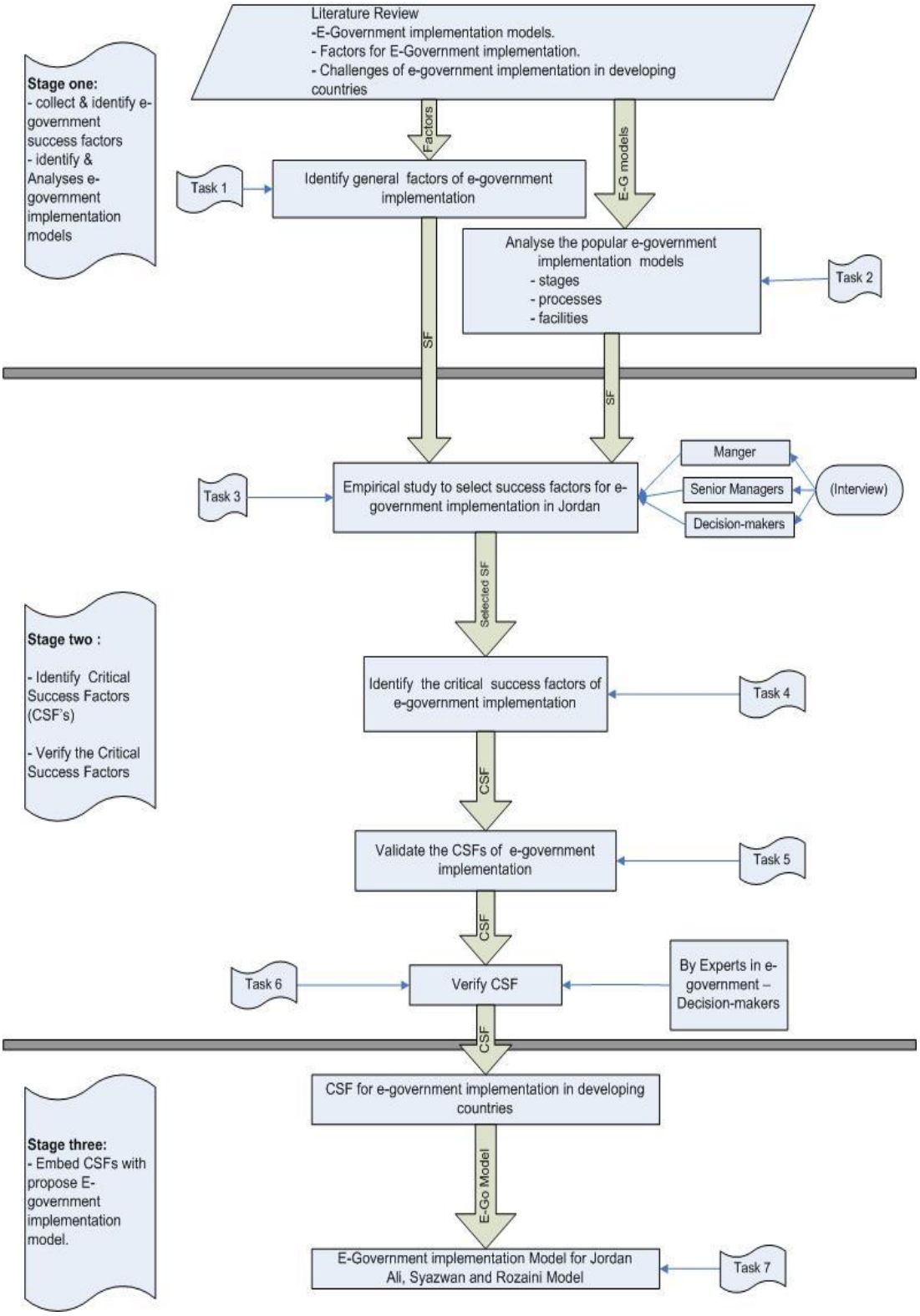


Figure 1.1. Development Stages of Model for E-government Implementation initiatives in Jordan

1.7 Research Contributions

The high level goal of this research is to develop successful model for e-government implementation in Jordan. Therefore, this research contributes toward the field of e-government, particularly in the area of implementation of e-government initiatives. The specific contributions of this research are:

The main goal of this research is to develop a model for effective implementation of e-government in Jordan. This study has reviewed and analyzed the popular e-government implementations models. Based on Satyanarayana (2006), the analysis includes the stages, facilities and processes for every stage in the models which are beneficial in identifying the strengths and weaknesses of each model. Thorough analysis of these prominent e-government models contributed to the development of a new e-government implementation model that is more appropriate for the successful e-government's implementation in Jordan.

The study also contributed in the identification of several CSFs for e-government implementation in Jordan. These CSFs could enhance the implementation of e-government in developing countries as well as improve the current e-government services.

The finding of this research could be considered valuable and helpful to policy and decision makers in developing countries such as Jordan in the process of planning and implementing successful e-government projects. This study also contributes to the present literature through empirical findings that are related to successful e-

government's implementation in developing countries. The e-government implementation model based on the analysis of popular models in this research certainly could also support developing countries in obtaining knowledge to the successfully implement e-government by taking into account its different characteristics in term of the stages, factors and facilities.

1.8 Thesis Organization

The thesis is organized in six chapters as follow:

Chapter One: Introduction

Chapter 1 offers background work on e-government and current challenges in implementing e-government initiatives. Based on these difficulties, the problem statement has been formulated, research objectives are outlined and the scope of the study is set. This chapter also presents the research strategy that is used to facilitate the research process. The final section of this chapter highlights the research contributions of the study.

Chapter Two: Literature Review

Chapter 2 provides an overview of the popular e-government implementation models, its characteristics, as well as the strengths and the weaknesses of each model. This chapter also analyzes the stages, facilities and services of each model. In addition, the benefits and barriers of e-government implementation in developing countries have been emphasized. The chapter also gives an overview about Jordan as

the context of the study and highlights the success factors for e-government implementation.

Chapter Three: Research Methodology

Chapter 3 discusses the research methodology used to achieve the research objectives. It gives a thorough explanation on the four stages that are used in this study in order to develop model for e-government implementation in Jordan.

Chapter Four: Finding & Develop E-government Implementation Model

Chapter 4 presents the findings of the empirical study which has been conducted in Jordan. It includes a detailed explanation on data analysis and results of the research study. Interview method is used as a method for data collection, and Nvivo software tool have been applied to conduct in depth analysis in determining the most important success factors that lead to the successful implementation of e-government initiatives in Jordan. Also explains in details the validation and verification process in determining CSFs for e-government implementation in Jordan. At this stage, experts review approach coupled with Delphi technique is conducted to verify the findings.

Also explains in details to develop the e-government implementation model as a main contribution for public sector in Jordan as a one from developing countries. At this stage, the CSFs embed with the proposing e-government implementation model.

Chapter Five: Conclusion and Future Works

Chapter 5 finally concludes the research through review of the works that have been conducted to achieve the outlined research objectives. It also highlights the contributions of this research as well as the potential future works.

CHAPTER TWO
LITERATURE REVIEW

This chapter discusses e-government's implementation and the general success factors in e-government initiative developing countries. The discussion includes definitions and categories of e-government, followed by e-government's implementation models, e-government operations in developing countries, benefits and barriers of implementing e-government. The chapter also describes the e-government in Jordan and the factors that lead to the successful e-government implementation in developing countries.

2.1 Introduction

It is generally accepted and known that the rapid rise of the Internet technologies, services and applications have changed the environment of Information Technology (IT) jobs in the governmental institutions and in the private sectors (Moon et al., 2014; Gascó, 2003). This has raised the pressure on governments to improve the performance of local and national government in an attempt to provide the related services to the citizens with the increased accessibility to citizens and other stakeholders in order to improve productivity, enable them to make most of their full transactions with the government via electronic channels (Harrison et al., 2012; Chaijenkij, 2010). Thus, e-government's implementation has become a priority in most countries around the world and this priority is growing rapidly in the developing countries (Grant & Chau, 2006).

In order to guide, develop and improve e-government initiatives, researchers have proposed different types of e-government's implementation models (Fang, 2002). These models have various stages and every stage has some services, objectives and operational procedures that are needed to be used in order to successfully implement e-government (Siau & Long, 2005). Investigating the factors for e-government implementation from these models will help governments in developing countries in implementing e-government successfully.

2.2 Definition of concept

2.2.1 **E-government**

The concept of e-government gained its popularity at the end of 1990s (Chen et al., 2013). The concept of e-government was virtually unknown decades before. ICT in a spectacular way has played an important role in incrementally changing every aspect of our live, how people live and work as a result of how companies do businesses and especially how governments serve their citizens as a result of the Internet development (Wei, 2010). E-government initiatives around the world have increased to more than five hundred national initiatives (Weerakkody et al., 2006; UN, 2008), while all developing countries have now been implementing some forms of e-government initiatives (Haque & Pathrannarakul, 2013).

E-government has different names in different countries. In Hong Kong, for example, it is called "electronic service delivery", it is known as "government online "in Australia, and "electronic government" (e-government) in India, Jordan and the

UK (Jenkins, 2002). Many researchers have introduced a number of different e-governments' definitions from multiple and different perspectives. Below are some definitions commonly quoted and adapted by many e-government studies:

> Bhatnagar (2002): *"E-government is sharing and delivering services to citizens and businesses for the purpose of reducing corruption, strengthening accountability, reducing time and cost, and increasing transparency".*
>
> LaVigne et al. (2002): *"E-government has four dimensions in relation to major functions and activities of governments: 1) e-services (delivery of government information electronically), 2) e-management (use of ICT to improve management and communication within and outside the government structures), 3) e-democracy (use of ICT to enhance citizens' participation in democratic activities), and 4) e-commerce (online transaction of goods and services)".*
>
> Ndou (2004): *"E-government is an Internet-worked government which links new technology with legal systems internally and in turn links such government information infrastructure externally with everything digital and with everybody".*
>
> World Bank website (2011): "*E-government refers to the use by government agencies of information technologies (such as Wide Area Networks, the Internet, and mobile computing) that have the ability to transform relations with citizens, businesses, and other arms of government. These technologies can serve a variety of different ends: better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, or more efficient government management. The resulting benefits can be less corruption, increased transparency, greater convenience, revenue growth, and/or cost reductions".*

From these definitions, it can be concluded that there are many perspectives of e-government and these are many similarities between these definitions. For example, all except Bhatnagar (2002) mention that the development of e-government depends

on the ICT tools to implement and provide quality services of e-government to the citizens. They also view businesses as a common objective.

There are also some differences between these definitions. Cook et al. (2002) in his definition of e-government define four main aspects of e-government (i.e., e-services, e-management, e-democracy and e-commerce) in terms of relations between government and other stakeholders. These aspects are the basic pillars of e-government that should be focused to develop and to improve it as well as to execute it through the stages of the e-government implementation. On the other hand, Bhatnagar (2002) focuses on developing countries. He elaborates the benefits of implementing e-government and how to help these countries reach the stages of development and progress through reducing corruption, strengthening of accountability and increasing transparency.

Ndou (2004) argues that e-government is "digital governmental information" where it needs to be implemented with the legal systems starting from the government's information infrastructure as a basic step to implement e-government that help improve the relationship between the government and its citizens. World Bank Website's (2011) definition of e-governments is more specific, since it focuses exclusively on the means of services delivery to citizens and businesses in another means of using ICT tools such as (large-scale networks, Internet, and mobile computing) that can improve and activate the services delivery to other stakeholders.

2.2.2 **Critical Success Factors**

The concept of CSFs was introduced by Rockart in the late 1970's as a mechanism to determine the information needs of top-level management and executive officers (Khandelwal & Ferguson, 2002; Rockart, 1982; Rockart, 1978).It has been used to present or to identify a few key factors that organizations should focus on to be successful (Kahreh et al., 2013). CSFs have been defined in several ways depending on the purpose for which they are used. The original definition of CSF was introduced by Rockart (1978) as *"the limited number of areas in which satisfactory results will ensure successful competitive performance for the individual, department, or organisation"* (Jami &Ahmad, 2009).

Boynton and Zmud (1984) agreed with the definition of Rockart's and defined CSFs as:

> *"Those things that must go well to ensure success for an organization"*. A more specific definition for the CSF has been offered by Dickinson et al (1984), they define CSFs as *those events, circumstances, conditions, or activities that require special attention of management because of their significance"* (Duquenoy et al., 2003).

2.3 Categories of E-government

E-government can be viewed based on the services within its authority to do transactions electronically with the government (Dwivedi et al., 2012). These services differ according to users' needs of ICT, interactions and relationships among citizens, government entities, businesses and/or employees with ICT (Alshehri & Drew, 2010). Figure 2.1 shows the relationship between the

stakeholders of e-government. E-government can be considered as a portal developed and built to connect and to identify, as well as to facilitate relations between the external users (Government to Citizen (G2C), Government to Business (G2B)) (Mahmood, 2013), and internal governing (Government to Government (G2G) and Government to Employees (G2E)) (Ha & Coghill, 2006; Siau &Long,2005). The four categories are discussed in Section 2.3.1 to 2.3.4.

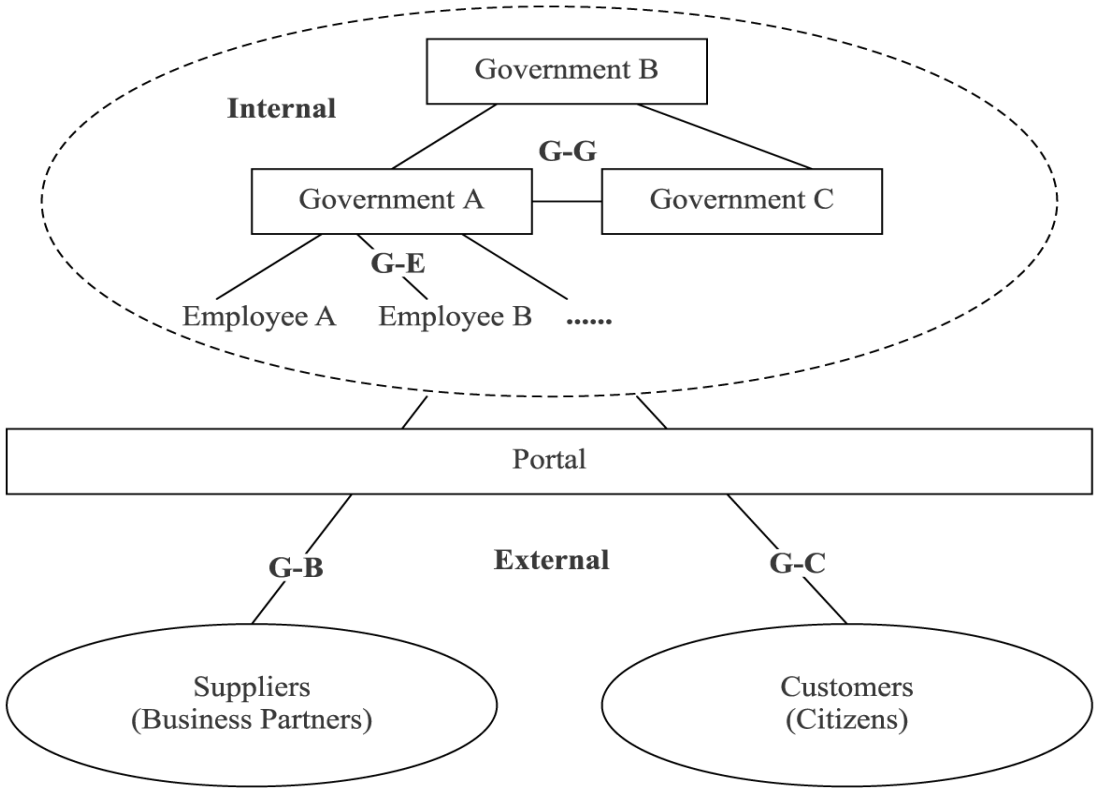


Figure 2.1. Relationship between Major E-government Stakeholders (Adopted from Siau & Long, 2005)

2.3.1 **Government to Citizen (G2C)**

Citizens should always be able to easily interact with the government. G2C initiatives are designed and developed to activate the interactions between the

government and the citizens through easy and less complex processes in order to provide appropriate support to the citizens anywhere and at any time (Alateyah et al., 2012; Abdullah et al., 2012). G2C focuses on the ability of the government and the citizens to communicate information using the Internet efficiently and effectively (Wang & Liao, 2008). Citizens can greatly benefit from these governmental communications, where these initiatives have a broad array of active interactions that can be developed (Mahmood, 2013). The wide range of services include the delivery of quality services, provision of welfare and health benefits to citizens and general government services such as renewing licenses and certifications, improving education information, providing prison security, paying taxes, applying for benefits and downloading government forms from the Internet (Asgarkhani, 2005; Ndou, 2004). In addition, G2C also allows citizens to participate in decision-making processes and e-voting on matters that affect them or of interest to society as a whole by securing ways in as little time as possible (Wang & Liao, 2008; Palvia & Sharma, 2007).

2.3.2 **Government to Businesses (G2B)**

G2B initiative has a significant amount of focus on e-government. It aims to serve the business sectors, focuses on strategies using ICT as tools to facilitate interactions and exchange of information between the government agencies and private businesses (Al Nagi & Hamdan, 2009; Asgarkhani, 2005). Development of this initiative promotes businesses more flexibly and develops the national economy including both the sale of surplus government goods to public and to other

governments as well as the procurement of goods and services, which helps businesses to check in one place for health, safety employment, and tax rules (Odat & Khazaaleh, 2012; Ha & Coghill, 2006). Activate the e-government initiative in business promotes greater flexibility and the development of the national economy, develops an electronic marketplace for government purchases and improves the skills of the workforce, especially those IT-related skills (Alateyah et al., 2012; Evans & Yen, 2006). These services can facilitate bigger revenues to the governments. G2B helps the government obtain data necessary in decision making for businesses execution (Zarei et al., 2008; Evans & Yen, 2006).

2.3.3 **Government to Government (G2G)**

G2G sector is considered as the backbone for any e-government (Miheso, 2013), because the main objective here is the electronic data exchange and sharing and/or information systems by using ICT as tools to improve the delivery of information and interaction among government officials within the government departments, within a government office (Internal Government), or between different governments within government offices (External Governments) (Alateyah et al., 2012; Furuholt & Wahid, 2008). Through online communication and cooperation, it allows for government agencies and departments to share databases, conduct communications in an efficient manner, eliminate the redundancy and duplication (Alshehri & Drew, 2010), also enhance the skills of the staff personnel's and increase the efficiency and affectivity of the services provided (Evans & Yen, 2006; Seifert, 2003).

2.3.4 **Government to Employee (G2E)**

G2E sector focuses on relationships within the government and among its employees, and on delivery systems within the e-government system to coordinate internal communication operations with governmental employees and to further improve the internal efficiency of business processes through promoting knowledge sharing among employees and enabling them to acquire the e-learning skills (Alisa & Bušatlić, 2013; Al Nagi & Hamdan, 2009). G2E is aimed at implementing the government's goals and programs as well as managing human resource, budgeting and accounting, as well as activating some applications of G2E such as e-payroll and e-training (Alateyah et al., 2012; Odat & Khazaaleh, 2012).

2.4 Models of E-government Implementation

Governments worldwide have different strategies and plans to establish e-government (Chen et al., 2006). Some have comprehensive long-term plans while others have chosen to distinguish only a few key areas as focal points of early project (e-government) implementation (Abdullaha et al., 2012). E-government initiatives have started in many countries however; they can be characterized by the levels of successful implementation (Nabafu & Maiga, 2012). The implementation of e-government varies from one country to another (Lee, 2010; Al-Hashmi & Darem, 2008).

The implementation of e-government can be seen as comprising of several stages where is a show the ways through which the governments worldwide implement and develop successful infrastructures as well as implementation for the electronic

government (Nabafu & Maiga, 2012; Lee, 2010; Sahraoui, 2007). From the existing literature, there is a lack of consensus regarding the number of stages of maturity that an e-government system goes through (Khan et al., 2010; Irani et al., 2006; Fallahi & Montazer, 2005).Some believes that only three stages are necessary, others believe that there are four, five or even six stages are which are required in e-government's implementation (Podder, 2013; Al-Shafi & Weerakkody, 2009; Irani et al., 2006). In spite of the differences in terms of the number of stages proposed, there are many similarities between these stages. Some of e-government models were either proposed and developed by individual researchers (e.g. Hiller & Blanger's Five-Stage Model (2001); Layne and Lee's Four-Stage Model (2001); Moon's Five-Stage Model (2002); Chandler and Emanuel's Four-Stage Model (2002); Howard's Three-Stage Model (2001) or by institutions (e.g. United Nation's Five-Stage Model (2001); Gartner's Four-Stage Model (2000); Deloitte and Touche's Six-Stage Model (2001); Word Bank's Three-Stage Model (2003); Asia Pacific's Six-Stage Model (2004) (Nabafu & Maiga, 2012; Siau & Long, 2005).

Therefore, it can be concluded that e-government involves multiple stages or phases for implementation and it is not a one-step process. Section 2.4.1- 2.4.16 critically discusses these e-government models.

2.4.1 **Layne and Lee's Four-Stage Model**

Layne and Lee (2001) regard e-government as an evolutionary phenomenon based on their observation and experience in the area. Layne and Lee produced one of the earliest models and consequently the most cited of such models related to e-

government growth, based on technical, organizational and managerial feasibility to help public administrators think about e-government and their organizations (Karokola & Yngström, 2009; Siau & Long, 2005). The model stages, as shown in Figure 2.2 are Catalogue, Transaction, Vertical integration and Horizontal integration.

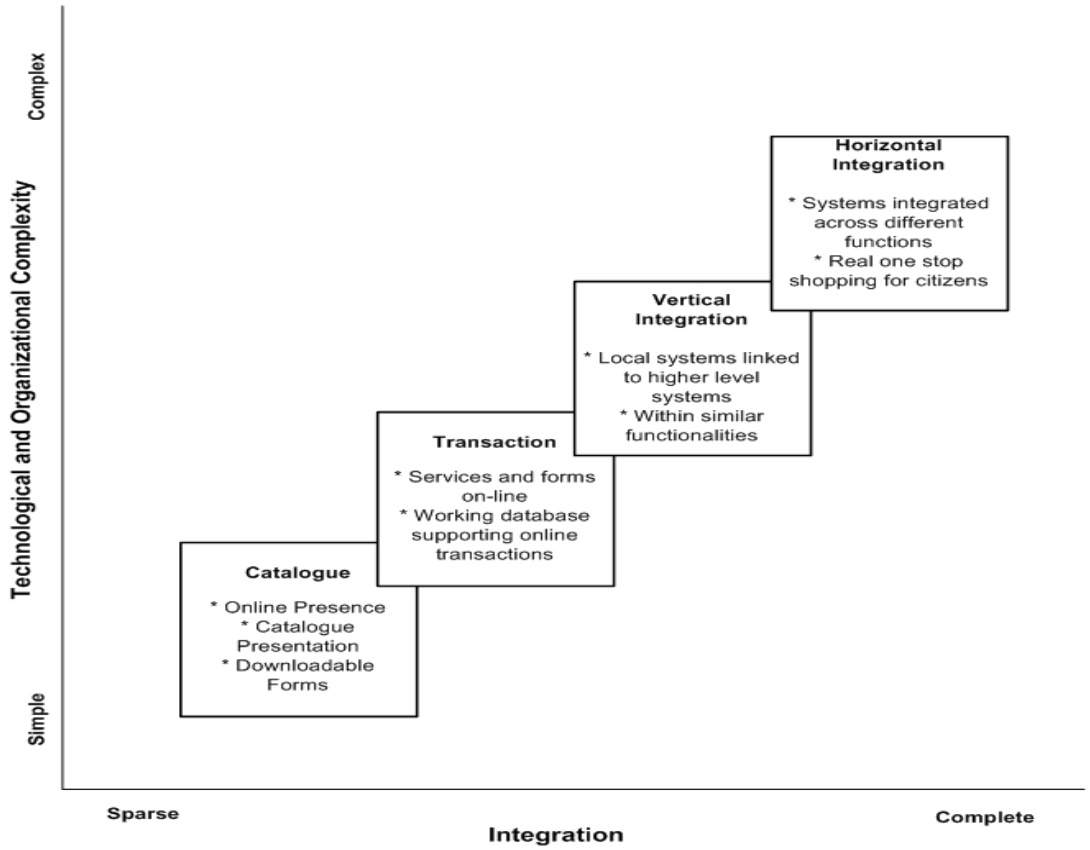


Figure 2.2. Layne and Lee's Four Stage Models, (Adopted from Layne & Lee, 2001)

1. Catalogue: This stage aims at the government's need for Internet services as a tool to provide basic information for clients. Through online services, it enables citizens as users to access on-line presentation and download forms.

2. Transaction: This stage aims at extending the capability of the forms, whereby it enables citizens to do transaction with government electronically, do some simple on-line transactions (two-way communications) such as transacting online services by searching database, receipts, filling out forms, and by providing confirmations from the governments.

3. Vertical integration: This stage initiates the transformation of government services rather than automating its existing processes. It focuses on the automation of more government workflows and transforms government services. It further includes integrating government functions at different levels, where agencies (within similar functionalities) in local system can be linked to higher level system. .

4. Horizontal integration: This stage focuses on integrating varying functions and systems between different levels so as to provide users with a variety of unified and seamless services. The last two phases focus on the integration of activities under the e-government within the current government structure.

Layne and Lee model focuses on identifying integrated services to the citizens (the main users of e-government) and then let the service providers build services according to the citizens' needs (Nabafu & Maiga, 2012; Persson & Goldkuhl, 2005). This includes minor and major changes in government structure and adaptation of new technologies to provide sufficient supports to adapt to the changes

occurred in the governments (Stanimirovic & Vintar, 2013; Karokola & Yngström, 2009).

Layne and Lee have a unique contribution to their model, as they did not mention the interaction stage instead, they moved directly to the transaction stage, and divided the integration stage into vertical and horizontal phases (Irani et al., 2006; Persson & Goldkuhl, 2005). Their model also did not consider benefits that can be gained from political changes (Coursey & Norris, 2008). They also pay very low interest in non-technical issues such as cultural, economical, ethical, legal and regulatory (Zarei et al., 2008).

2.4.2 **United Nation's (UN / ASPA) Five Stage Model**

United Nation and the American Society for Public Administration (UN/ASPA 2001), proposed a model of e-government. This model is very similar to the Layne and Lee's model (2001) (Yildiz, 2007). The UN-ASPA model consists of five stages of development: Emerging web presence, Enhanced web presence, Interactive web Presence, Transactional web presence, and Seamless web presence. The UN-ASPA model represents the level of government development based primarily on the content and deliverable services available through official websites (efficient web-based public service) (Al-Hashmi & Darem, 2010; Al-Khatib, 2009). The model stages, as shown in Figure 2.3 are defined as follows:

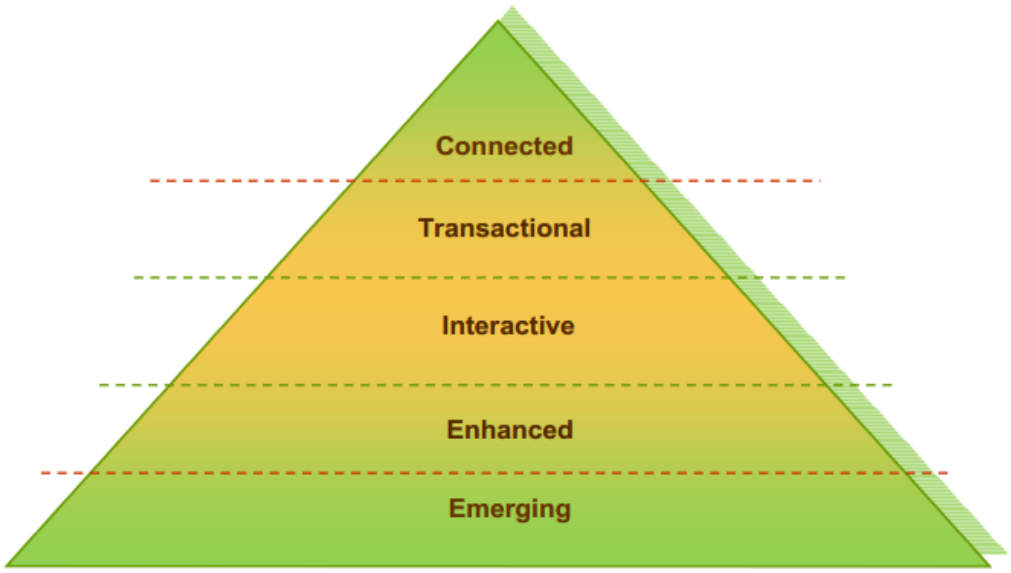


Figure 2.3. United Nation's (UN / ASPA) Five Stage Model (Adopted from United Nations, 2008)

1. Emerging web presence: this is the initial stage of the ASPA-UN model. It emphasizes on the needs of creating websites that provide basic and static information about the organization or government with less or no interactions with the citizens.

2. Enhanced web presence: at this stage, the government needs to update regularly its websites, improve websites to be more dynamic with current information. Amongst the new website features included are search facilities on-line help, and site maps.

3. Interactive web presence: at this stage, users and service providers are connected to government portals (websites), where the interaction takes place at a more sophisticated level. Some services include downloading forms and

e-mailing facilities that will allow government officials to interact with clients through the webs allowing the governments to make appointments and other services.

4. Transactional web presence: this stage allows two-way interactions between the citizens and the government through which users can actually pay for services online, and have the capability to conduct complete and secure transactions such as obtaining visas, licenses, passports, birth and death records, and others online safety and security services.

5. Seamless web presence/ Fully integrated presence: this is the final stage that has sophisticated level of e-government services delivery in which governments utilize a single and universal website to properly deliver all types of functions and services available to the citizens using this website as a comprehensive gateway, where administrative and departmental boundaries are integrated.

UN/ASPA model is based on technology development (web-based) and administrative aspects (functionality) (Chen et al., 2011). The model is considered specific issues related to technical security at a transactional stage (Nabafu & Maiga, 2012). Furthermore, this model also does not consider the possibility of benefitting from any political changes (Karokola & Yngström, 2009; Yildiz, 2007).

2.4.3 **Gartner's Four Stage Model**

Gartner Group (Baum & Di, Maio, 2000) has developed an e-government maturity model that can measure progress and to examine the growth of e-government initiatives (Chen et al., 2009), and to establish a road map to achieve the desired levels of constituency service (Zarei et al., 2008; Al-Hashmi and Darem, 2010). Gartner Group has proposed the progress of e-government at four stages (phases) depicted in Figure 2.4. The stages involving: Web presence, Interaction, Transaction, and Transformation. The descriptions of the four stages are as follows:

1. Web Presence: this is the initial stage where here, the government agencies provide basic and simple information such as the mission, addresses, opening hours and some official documents to the public through static website that is accessible by the citizens.

2. Interaction: this stage allows simple interactions between the government and the citizens (G2C), government to business (G2B), or government agency to government agency (G2G). Through these websites, the government provides services such as search engines, documents downloading and emails to provide the public with the access to various forms and sites.

3. Transaction: this stage focuses on building self-service applications for the public to access online services where users (customers and businesses) can conduct complete on-line transactions. These transactions including buying

and selling activities such as paying for online license renewals, paying taxes or fees, or submitting bids for procuring contracts.

4. Transformation: This is the last stage in the Gartner model. It is aimed at transforming current operations to ensure a more efficient, integrated, unified and personalized services. The transformation is seen at the regional and national level. It consists of integration between internal and external applications to ensure full continuity between government offices and Non-Governmental Organizations (NGO).

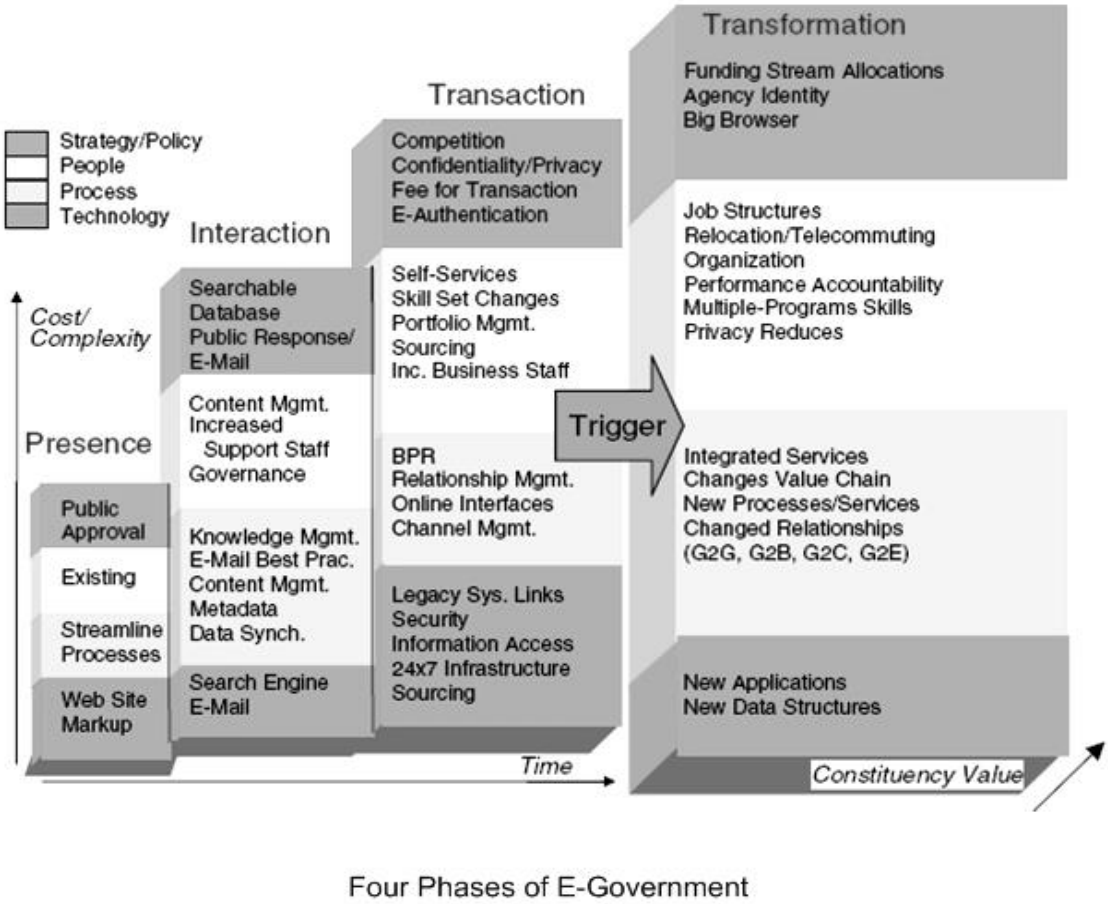


Figure 2.4. Gartner Group Model (Adopted from Zarei et al., 2008)

Gartner Group model highlights the evolutionary nature of e-government that focuses on citizen-centric and partly on functionality, based on technology organizational and managerial feasibility. This model is considered concise and easy to follow (Karokola & Yngström, 2009). Furthermore, Gartner Group model only partly emphasizes some issues of technical security during the transaction stage (Tripathi & Gupta, 2013).On the other hand, the model considers specific security (non-technical), and it ignores the potential benefits of political changes (Zarei et al., 2008; Siau & Long, 2005).

2.4.4 **Deloitte & Touch's Six-Stage Model**

Deloitte and Touch (2001) propose a mature model for e-government's implementation to serve citizens as customers and build long term relationships with the citizens (Karokola & Yngström, 2009). Deloitte and Touch considered a six-stage model: Information publishing/dissemination, Official two-way transaction, Multi-purpose portals, Portal personalization, Clustering of common services, Full integration and Enterprise transaction. The model stages are described as follows:

1. Information publishing/dissemination: at this stage, each individual government department provides users with increased accessibility to information through their websites. The communications just one way direction.

2. "Official" two-way transaction: this is an advanced stage, where agencies use advance and secure websites for encouraging interactions between

governments and users through the use of ICTs such as digital signatures and security keys. This stage allows customers to deal with online services such as renewing licenses and paying parking tickets through secure websites.

3. Multi-purpose portals: at this stage, the government uses a single portal to provide general universal services and allows the customers to send and receive information across multiple departments.

4. Portal personalization: this stage provides citizens/users with the opportunities to customize the portals based on their needs and unique features.

5. Clustering of common services: at this stage, the government clusters all the services and operations along common lines to speed up the process of delivery, enhance collaboration and reduce intermediaries so as to offer good and efficient services to the citizens.

6. Full integration and enterprise transaction: this is the final stage, where some government departments appear and others disappear. Some of the e-government services are integrated and placed appropriately in departments. Here the government adapts its delivery structure by providing more sophisticated, integrated, and personalized services to every citizen according to their preferences.

Deloitte and Touch (2001) presents a six stage model, where the model focuses on delivering the government services from a single point by using a portal that provides a full range of services (citizen-centric) and based on the perspective of customer services (Tripathi & Gupta, 2013; Al-Shafi & Weerakkody, 2009). This process is an evolution of the relationship between governments and citizens to enable citizen to have easy and single access to government services without requiring any agency to be responsible for those services (Siau & Long, 2005). Even though the potential benefits of policy changes are ignored, it also gives a little attention to specific related security issues: technical and non-technical (Tripathi & Gupta, 2013; Karokola & Yngström, 2009).

2.4.5 **Hiller & Blanger's Five-Stage Model**

Hiller and Belanger (2001) present a growth model similar to Layne and Lee's model (Reddick, 2004), which has five stages of e-government implementation: Information dissemination, Two-way communication, Service and financial transaction, Vertical and horizontal integration and Political participation. Hiller and Belanger suggested that these five stages to be tested empirically (Tripathi & Gupta, 2013; Siau & Long, 2005).The descriptions of the five stages are as follows:

1. Information dissemination: this is the initial stage and is the most basic form of e-government in Hiller and Belanger model. At this stage, the government posts all information and data by posting it on the website (static). The communication is a one-way direction.

2. Two-way communication: at this stage, citizen communicates via websites with the government, interaction conducted via email and downloadable forms.

3. Service and financial transaction: at this advance stage, all the transactions are conducted using more sophisticated technology (online). Transactions occur both between government and the businesses (G2B) such as renewal licenses, fines payment, financial aid application and others, and between the government and the citizens (G2C) such as visa application, license payment, and renewals online and taxes payment.

4. Vertical and horizontal integration: this stage is similar to the last two stages in Layne and Lee (2001) model, vertically (inter-governmental integration) and horizontally (intra-governmental integration) by government. Here, the citizen can access all services by using a single website (portal).

5. Political participation: this final stage is where citizens as participants can be involved in political participation and some related services through the internet, political participation such as e-voting. They can even participate in the decision making process by posting comments and suggestions, as well as through electronic public forums and e-opinion surveys.

Hiller and Belanger model is based on a general and integrated perspective. This model focuses on function usage (functionality) and it also considers the potential benefits of political change (Coursey & Norris, 2008; Persson & Goldkuhl, 2005).

Siau and Long (2005) argues that the political participation stage is vital for the advancement of any e-government. However, the model at the financial transaction stage stresses on issues of safety and security and condones specific issues that are non-technical (Tripathi & Gupta, 2010; Karokola &Yngström, 2009; Shahkooh et al., 2008).

2.4.6 **Moon's Five-Stage Model**

Moon (2002) has developed a five-stage model by adapting Hiller and Bélanger's (2001) model. There are large similarities, particularly from stage two to five between Moon and Hiller and Bélanger's model (Karokola & Yngström, 2009). Moon model looks at the technical complexity and web interactivity, and can be best used to analyze the structural elements of municipal website (Tripathi & Gupta, 2013; Siau & Long, 2005). Descriptions of the four stages are as follows:

1. Simple information dissemination (one-way communication): this stage is considered as the preliminary of e-government development, and is the most basic for e-government, where government disseminates information to the citizens simply by posting it on the websites.

2. Two-way communication (request and response): at this stage, interaction occurs between government and its citizens. The government uses enhanced websites with various capabilities such as e-mail system and downloadable forms to interact with citizen, where the government agencies receives new

applications and requests, and then processes and responds to these service requests.

3. Service and financial transaction: this is the more advanced stage than the previous stages. Here transactions occur both between the government and the individuals, where the government allows online services and financial transactions by completely replacing public servants by "web-based self - service". For example, constituents can renew licenses, pay fines, and apply for financial aids.

4. Vertical and horizontal integration: this stage is similar to the last two stages of Layne and Lee's (2001) model. At this stage, the government attempts to integrate various government services vertically and horizontally for efficiency enhancement.

5. Political participation: This stage involves the promotion of web-based political participations. The government involves citizens in political participation activities, including online voting, online public forums, and online opinion surveys for more direct and wider interactions with the public.

The Moon model focuses on functionality and on the political change, where the e-government services have contributed dramatically to politics, government institutions, red tape reduction, performance management and re-engineering (Tripathi & Gupta, 2013; Karokola & Yngström, 2009). However, Moon model gives attention to security issues only at the stage of financial transactions, and at the

same time ignores the other specific security issues including the non-technical (Coursey & Norris, 2008; Siau & Long, 2005).

2.4.7 **World Bank's Three-Stage Model**

World Bank (2003) proposes a maturity model to implement e-government that helps assist policymakers in devising their own plans and initiatives (Al-Hashmi & Darem, 2008). This model involves three stages: Publish Interact and Transact. Descriptions of the model stages are as follows:

1. Publish: this is the first stage, where the dissemination of information about the government to citizen is done through published sites (websites). This information includes rules and regulations, documents and forms. In doing so, publishing sites are the most effective step for the advancement of e-government.

2. Interact: this stage begins with the government requiring the interactions with citizens (two-way communication). Websites improved with interactive capabilities such as feedback forms and e-mail which allows users to comment on legislative proposals or policies.

3. Transact: this is the final stage of e-government development in this model, which allows the citizens to obtain government services or to deal with the government on the Internet. Users can help make complete and secure transactions on the Internet. This in turn enhances productivity in both public

and private sectors, making the processes that require government assistance fast, and economical.

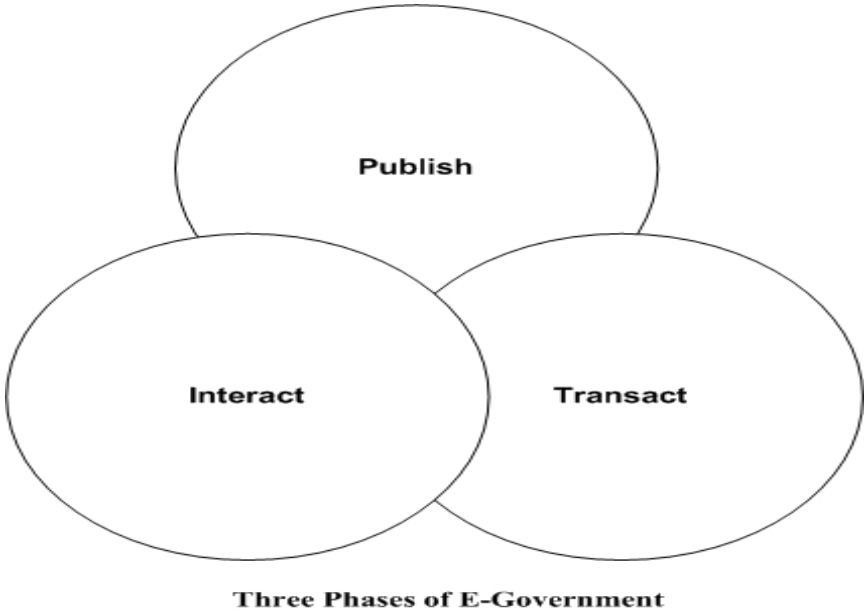


Figure 2.5. World Bank's Model (Adopted from Al-Hashmi & Darem, 2003)

World Bank's Model shown in Figure 2.5 divides the process of e-government implementation into three phases (Al-Hashmi & Darem, 2008). Here every phase is independent from each other, and there is no need for one phase to be completed before another one can begin (Drew, 2011).This model focuses on functionalities and on citizen centeredness. World Bank's model development does not observe the potential benefit of political change and lack most security related issues, where the security is addressed only at its final stage, which is completing the transactions (Karokola & Yngström, 2009; Andersen & Henriksen, 2006).

2.4.8 **Chandler and Emanuel's Four-Stage Model**

Chandler and Emanuel (2002) divide their e-government's implementation model into four stages: Information, Interaction, Transaction and Integration. Descriptions of model stages are as follows:

1. Information: this is the preliminary stage, in which there are simple interactions between citizens and government. Most of government services are available through the Internet. This is a one-way communication between the government and citizens, where citizens can access their government information over static websites.

2. Interaction: at this stage, the simple communication between citizens and government becomes more advanced and enhanced, as there are various website features and functionalities that are available, including search and email facilities. The communication in this stage is a two-way process.

3. Transaction: at this stage, the service enables complete transactions of values between the citizens and the government agencies, where the citizens can freely submit forms on-line, pays taxes and reform other kinds of transactions.

4. Integration: this is the final stage in Chandler and Emanuel's model where the vertical and horizontal services are integrated across government and its agencies. From the service center, the citizens can access information on-line.

Chandler and Emanuel's model focuses partly on functionalities and is considered as citizen-centric (El-Qawasmeh, 2011). However, this model ignores the potential benefits of political changes and the specific non-technical security related issues (Karokola & Yngström, 2009). This model facilitates unrestricted two-way communication with technologies such as e-mail and discussion boards, and it allows explicit transactions processing, where the citizens can perform a complete transaction via an online interface (Fallahi, 2007). In addition, the model gives little technical security considerations at the transaction stage (Irani et al., 2006).

2.4.9 **Howard's Three-Stage Model**

Howard (2001) proposes a maturity model for e-government's implementation that consists of three stages, namely Publication, Interaction, and Transaction. The discussion is as follow:

1. Publication: this is the initial stage in this model where at this stage the information about activities of e-government is available online for the all citizens.

2. Interaction: this is the advanced stage in this model. Citizens have the ability to undertake simple interactions with the government, and the services they provide include e-mail communication, chat rooms, and sending as well as receiving forms.

3. Transaction: based on the model design, this is the highest stage of e-government development. At this stage, the government provides its citizens with full benefits of conducting transactions over the Internet where the citizens can apply for programmes and services, as well as make purchases/payments of licenses and permits.

In this model, Howard focuses on functionalities and at the same time on citizen centric (Shareef et al., 2011).However, it does not go as far as an integration stage. Therefore, this is considered the shortcoming in Howard model (Irani et al., 2006). Having integration stage is important because only the integration stage facilitates any flow of government information between different levels of agencies and departments, and enables citizens to access government services from a single point (Al-Khouri, 2013; El-Qawasmeh, 2011). In addition, this model did not take into account the potential benefits of the political changes and the specific security related issues, particularly the non-technical (Fallahi, 2007).

2.4.10 **UK's Five Stage Model**

The UK National Audit Office (2001) presented a report to the House of Common, which indicated stages of electronic services initiatives and their implementation. The report illustrates the proposal of a five stage model, which presents the progression and the steps for service provision from stage one the initial stage to a holistic e-government system. Figure 2.6 depicted the stages. The stages involving: Basic site, Electronic publishing, Interactive e-publishing, Transactional website and Joint-up e-governance. The descriptions of the five stages are as follows:-

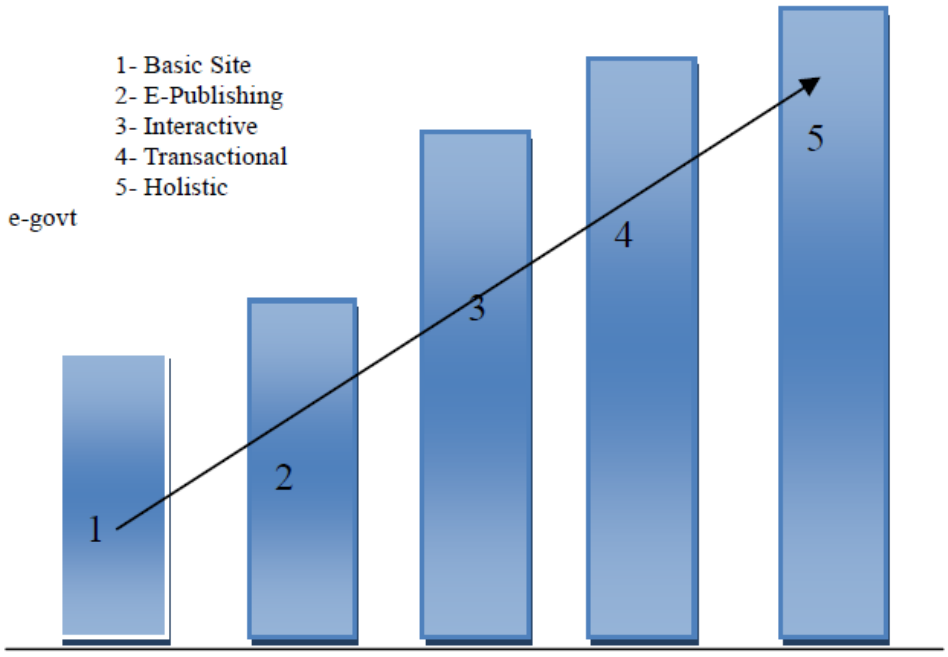


Figure 2.6. *UK Model (Adopted from Al-Hashmi & Darem, 2003)*

1. Basic site: this is the first stage at UK (2001) model, at this stage the government create some static websites that uses to provide core information regarding various institutions in a variety of different formats for public use.

2. Electronic publishing: at this stage, government institutions develop an external portal which will be a vital part of the overall communication strategy. The portal contains many pages and the institutions provide a huge amount of information online, but in a linear mode. The institutions support basic forms for e-mail contacts. However, the external portal is not connected to the institution's back-office systems.

3. Interactive e-publishing: This stage features personalization options and customizable search tools. Some forms can be submitted online and others

can be downloaded. Moreover, at this stage there is an extensive use of emails and the responses are timely. Also availability of effective search tools at this stage enables citizens to identify its address and post code in order to access only local information which can be picked from institutions' database. Besides that, email alerts to notify the users about new content is an offered functionality.

4. Transactional website: At this stage, in which users can confirm them to the institution and register their identities. Thus, the user will be able to complete transactions online, such as making secure payments of fees or taxes also downloadable forms are available and submitted online.

5. Joint-up e-governance: This is the last stage of this model, this stage is accomplished when the public sector gate that can facilitate "one-stop shopping" online services for citizens, and citizens are able to access the central government institutions transparently and through the central government as a whole institutions. The integration of government institutions occurs at this stage (vertical and horizontal integration).

UK (2001) model highlights the evolutionary nature of e-government that focuses on citizen-centric and partly on functionality, based on technology organizational and managerial feasibility (Shareef et al., 2012). This model is also considers the potential benefits of political change. UK (2001) model argues that the political participation stage is vital for the advancement of any e-government (Karokola

&Yngström, 2009). Furthermore, On the other hand, the model considers specific security (non-technical). Jordan one from developing country and which is the focus of the study in this research was used the UK model to implement e-government stages (Karokola & Yngström, 2009).

2.4.11 **PPR's Four Stage Model**

Andersen and Henriksen's (2006) have developed an e-government maturity model. Public Sector Process Rebuilding (PPR) model is argued to be an extension of the Layne and Lee (2001) Model. The PPR (2006) model consists of four stages Figure 2.6 depicted the stages. The stages involving: Cultivation, Extension, Maturity and Revolutionary. The descriptions of the four stages are as follows:-

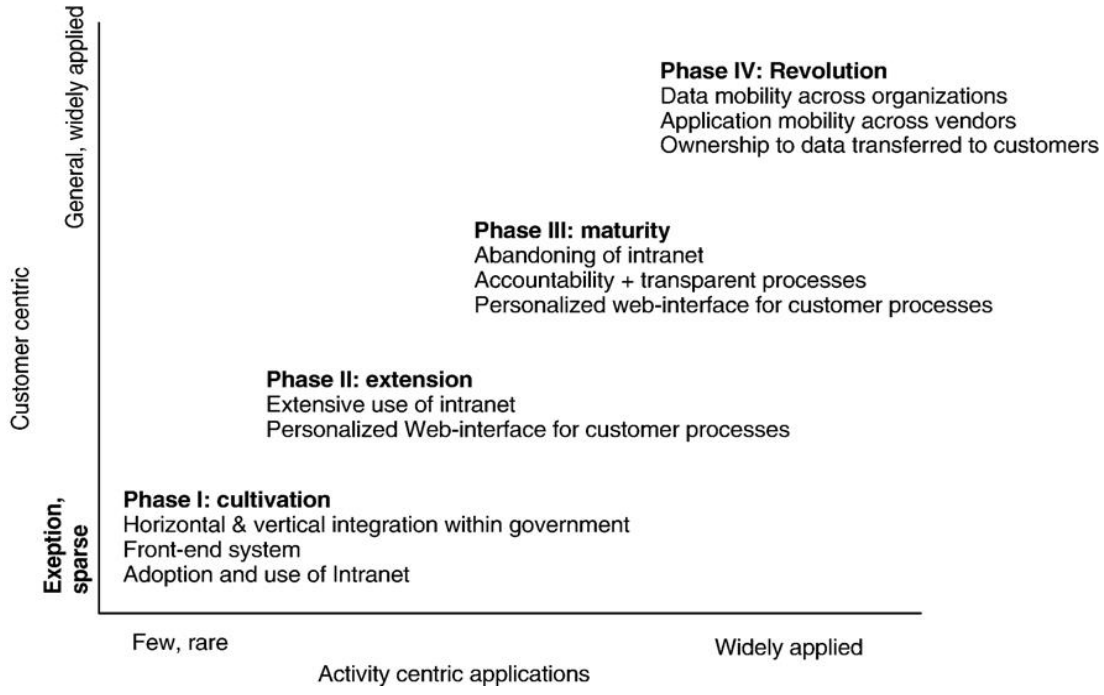


Figure 2.7. Public Sector Process Rebuilding (PPR) model (Adopted from Andersen & Henriksen, 2006)

1. Cultivation: at this stage, shelters horizontal and vertical integration within government, limited use of front-end systems for customer services, and adoption and use of Intranet within government. The organizations in this group are not likely to have digital services in focus and will rarely have work processed and displayed through the net. Instead, the organization is unclear whether to define the objective with the use of the Internet to increase the user frequency, the services provided, and/or the quality and speed of services. At this stage also less attention is given to the use of the Internet to increase user frequency, services provided, and/or the quality and speed of services. The downside is that the public institution in this phase will be experienced as inaccessible, have long case processing time, and no accessibility for accessing the processing of requests. This is the stage where most governments are now, and worse it is often considered a strategic goal for most governments. Having the characteristics of this phase as a strategic goal can be counterproductive to the activity and customer focus.

2. Extension: this is the second stage in PPR (2006) model, this stage involves extensive use of intranet and adoption of personalised web user interface for customer processes. May be characterised to involve costly user interfaces, no integration with other systems, expensive maintenance, and fading out of old software and data format. Also at this stage there are still many manual routines, and while the user might be likely to find many forms and information, the agency is equally interested in re-directing the users to information at other agencies.

3. Maturity: in this stage mature and abandon the use of the intranet, have transparent processes, and offer personalised self-service web interface for processing customer requests. At this stage, Internet and intranet applications are merged to lower marginal costs for processing the customer requests for services. Rather than linking to other institutions, the homepage is feeding information from other institutions to the users online. Self-service is a key priority in this stage and the exceptions where this cannot be completed online are clearly stated with instructions on how to proceed in analog mode.

4. Revolutionary: this is the last stage in PPR model. This stage characterized by data mobility across organizations, application mobility across vendors, and ownership to data transferred to customers. In this phase, the employees' actions can be traced through the Internet and there is information available online about progress in.

PPR (2006) model is argued to be an extension of the Layne and Lee (2001) model. The major difference between the Layne and Lee (2001) model and the PPR (2006) model, is the PPR (2006) model expands the e-government focus to include the front-end of government with a focus on the activity and customer-centric approach rather than the technological capability (Nasr & Galal-Edeen, 2012; Bwalya, 2009). Also the two key dimensions are displayed along the horizontal and vertical dimensions, respectively (Nasr & Galal-Edeen, 2012). Applications developed along these two dimensions can be rare or widespread in the extended organizational room

of governmental activities. Rather than being discrete variables, the variables should be used as a continuum (Bwalya et al., 2012).

2.4.12 **West's Four Stage Model**

Darral West (2000) proposed a mature four stage model of e-government development to serve citizens as customers and build long term relationships with the citizens. Darral West (2000) considered a four-stage model: Billboard, Partial service delivery, Full integrated service delivery and Interactive democracy with public outreach and accountability. The model stages are described as follows:

1. Billboard: at this stage the Static mechanisms to display information (static websites). Many types of information can be posted on the website like reports and publication, in this way citizen (visitor) could easily access to the displayed information.

2. Partial service delivery: at this stage, the governments start to place some services online for citizen to access; at this level the on-line website has more capabilities and functionalities include sorting and searching of information data bases.

3. Full integrated service delivery: at this stage, one stop centre is created (government portal) with full executable and integrated online services are available. Citizen can easily access government and agencies information from one service centre from one place where all agencies can be accessed.

4. Interactive democracy with public outreach and accountability: this is the final stage in the Darral West (2000) model, at this stage Government websites move to a goal of system-wide political transformation. In addition to having integrated and fully executable online services, these kinds of government sites offer options for website personalization and push technology. Citizens can easily access government information and also customize the on-line government information service delivery system(s) and take advantage of the interactive and two-way communications strengths of the Internet.

Darral West (2000) model focuses on functionality and citizen-centric (Karokola &Yngström, 2009; Shahkooh et al., 2008). Moreover, the model gave rather little consideration security (technical and non-technical) as a specific problem (Bwalya et al., 2012). However, this model considers the potential benefit of political changes at its highest stage (Karokola &Yngström, 2009).

2.4.13 **Watson & Mundy's Three Stage Model**

Watson and Mundy (2001) used their model to describe the development of e-democracy on government websites. Watson and Mundy (2001) are particularly interested in the filming of e-government as the process of diffusing technological innovation in government circles. Therefore, they hence focus on the efficiency and effectiveness of the gains characteristic of three stages: Initiation, Infusion and Customization. The model stages are described as follows:

1. Initiation: At this stage, provide a single-point of access to government information and web-enabling government payments (static information). Efficiency is improved by reducing the cost of government transactions. Effectiveness is improved through the creation more awareness of citizens.

2. Infusion: At this stage, almost all government agencies adopt the principles of e-government including the mass presentation, and the review of the extensive use of pay online by citizens. Probably through the strategic use of solutions provide application services for small government organizations. Effectiveness is improved through increased transparency in government operations and increase open access to government.

3. Customization: At this stage one-to-one relationship is built between citizen and government. Personal profiles are maintained of citizens and their interaction with the government. This allows for the development of personal gates to government in which citizens can customise information of relevance.

Watson and Mundy (2001) model particularly focuses on the human activity infrastructure of e-government. Where technical issues are raised it tends to excessively focus on the front-end informatics issues and hence does not explicitly refer to the back-end integration required (Shareef et al., 2011). However, emphasise the likely significance of customisation and personalisation to the future of the electronic services delivery model of e-government (Shareef et al., 2010).

2.4.14 **Siau & Long's Five Stage Model**

Siau and Long (2005) suggested five different e-government stage model capturing the whole vision of e-government (using Meta-synthesis method). Siau and Long (2005) considered a five-stage model: Web Presence, Interaction, Transaction, Transformation, and E-democracy. The model stages are described as follows:

1. Web presence: this is the first stage in Siau and Long (2005) model. This stage is the most basic form of e-government. At this stage government typically posts simple and limited information through static web site. In other words, governments only provide information on the web sites and no interaction is possible. However, with the advancement of e-government capability, the information posted can be more dynamic, specialized, and regularly updated.

2. Interaction: at this stage, government provides simple interaction between the governments and the users. This interaction includes basic search engines, e-mail systems, as well as official form downloads. The interaction stage as the preliminary step of transaction can be regarded as a transitional period between simple web presence and complete transaction.

3. Transaction: This stage enables users (including both individual citizens and business) to conduct complete online transactions. At this stage citizens can conduct self-services online such as license applications, tax filing, and personal information updates. In addition, businesses can access online

services such as fulfilling tax forms, applying licenses and reporting financial data. Online businesses such as obtaining order and making auctions are also possible.

4. Transformation: at this stage there is a "jump" between transformation and the previous three stages. Rather than automating and digitalizing current operational processes, this stage moves towards transforming the way that governments provide services. The transformation involves both vertical (i.e. governments in different levels) and horizontal integration (i.e. different departments or governments in different locations). For external interfaces, governments build a single and unified portal providing integrated and seamless services instead of separate and distributed services. To attain this goal, governments should initiate an internal integration to re-engineer existing processes by reducing bottlenecks and intermediaries.

5. E-democracy: this is the final stage in Siau and Long (2005) model. This is a long-term goal for e-government development. By provide tools such as online voting, polling and surveys, governments seek to improve political participation, citizen involvement, and politics transparencies. At the same time, e-government gradually changes the way in which people make political decisions**.**

Siau and Long (2005) translated the stages within different models into one another and developed a new e-government stage model (Using Meta-synthesis method)

(Komba & Ngulube, 2011). The first four stages of Siau and Long (2005) five-stage model are similar to the one by Gartner (2000) Model (Shareef et al., 2011). Siau and Long (2005) model highlights the evolutionary nature of e-government that focuses on citizen-centric and partly on functionality, based on technology organizational and managerial feasibility (Nasr & Galal-Edeen, 2012). This model is considered concise and easy to follow (Karokola & Yngström, 2009). Furthermore, Siau and Long model only partly emphasizes some issues of technical security during the transaction stage (Tripathi & Gupta, 2013). On the other hand, the model considers specific to the Non-Technical Issues as increase awareness for the citizen (non-technical), and it focuses the potential benefits of political changes (Komba & Ngulube, 2011; Siau & Long, 2005).

2.4.15 **Accenture's Five- Stage Model**

Accenture (2003) developed a five stage maturity model of e-government. The model was used to rank the following countries in e-government: Canada, Singapore, United States, Denmark, Australia, Finland, Hong Kong, United Kingdom, Belgium, Germany, Ireland, France, The Netherlands, Spain, Japan, Norway, Italy, Malaysia, Mexico, Portugal, Brazil, and South Africa. Accenture (2003) considered a five-stage model: Online presence, Basic capability, Service availability, Mature delivery and Service transformation. The model stages are defined as follows:

1. Online presence: Is the first stage of the Accenture (2003). This stage involves the publication of essential government information online for citizens' use through the static website. This includes simple public services

like publishing government information online; making available a few services like downloading forms (one way communication). This stage needs lowest amount of technical ability.

2. Basic capability: this stage building on what has been developed in the first stage. This stage includes creating a central plan, a central plan, developing a legislative framework, addressing the security and certification problem, broadening the online presence, and implementing some easy transaction capabilities. Customers can submit their personal information to individual agencies and digital signature is introduced. This stage requires a higher level of technical abilities.

3. Service availability: at this stage, a basic portal website should be available. This stage acts as a gateway to the e-government system. In this stage some efforts made to integrate services available through different agencies. Some cross– agencies or horizontal cooperation started, and citizen focus is presented.

4. Mature delivery: at this stage, e-Government implementation has reached an advanced stage where even customer service has fully emerged into the system. Where at this stage, there is clear ownership, responsibility and authority, intra-agency relationships and collaboration across different levels of government.

5. Service transformation: this is the final stage in this model. At this stage the main vision is to improve customer service by removing any problems the users are facing. Where this is the final stage of e-Government maturity and the different e-government platforms are able to deliver all the public services which could otherwise be provided in a paper world.

Accenture (2003) presents five stage model, where the model highlights the evolutionary nature of e-government that focuses on citizen-centric and partly on functionality, based on technology organizational and managerial feasibility, also the model focuses on whether the e-government service is penetrating to the basic customers (Shareef et al., 2012; Al-Mushayt et al., 2012). On the other hand, the model considers specific security (technical) and ignores the potential benefits of political changes (Al-Mushayt et al., 2012; Bwalya et al., 2012).

2.4.16 **Asia Pacific's Six-Stage Model**

Asia Pacific (2004) e-government's model is a more widespread model in Asian countries. The Asia Pacific model was created and developed based on their experience in e-government implementation (Karokola & Yngström, 2009). In this regard, this model has proposed the following six stages of the maturity model:

1. Setting up an email system and internal network: this is the first stage in this model. The government systems in this stage focus on internal processes supports basic administrative functions such as communicating internally using e-mails in most government organization as well as developing

infrastructure for communication where it is considered the first step in e-government implementation

2. Enabling inter-organizational and public access to information: this stage involves the development of government system that manages workflow. These are accomplished through government processes by managing it electronically after using the traditional way (paper work) for many years. Also at this stage, citizens (public) and organizations can freely access the government information through the use of the Internet.

3. Allowing two-way communication: this stage allows a two-way communication between the government and the public by using ICT tools, for instance one or more telephones and mobile phones, fax numbers or email addresses are posted on the websites to encourage the public to send messages to the government and receive feedback or response. This website allows citizens to select from categories such as government services, laws and regulations, a centre of news, links to other governmental departments, and to email facilities.

4. Allowing exchange of value: at this stage, ICT plays the vital role in supporting the development of more flexible and convenient ways for citizens to carry out businesses with the government. Opportunities are available at this level to the citizens to use the available on-line government

service such as welfare claims, tax assessment, visa applications, license renewals, and other services.

5. Digital democracy: this stage is the first important set of ICT application that gives citizens the opportunity to benefit from ICT-enabled voting sites, which can potentially support participatory and democratic processes. For instance, the use of on-line applications can empower public's civil organizations and citizens to vote.

6. Joined-up government: this is the final stage and the second important set of ICT application. There are both vertical and horizontal integrations of service delivery in this stage to help citizens get seamless service without the need to recognize government agencies.

This is the general model that does not address specific issues explicitly, with the exception of stage one (Allowing the exchange of value) (Shahkooh et al., 2008). It also considers the potential benefits of political changes. However, this is citizen-centric and only focuses on the functionality for successful e-government implementation (Karokola & Yngström, 2009).

From the all previous models, Table 2.1 shows the A Summary Comparison of the popular e-government implementation models that was discussion in this thesis.

Table 2.1

A Summary Comparison of the e-Government Implementation Models

Prominent existing e-government Models	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Stage 5**	**Stage 6**	**Stage 7**	**Stage 8**
Layne & Lee's Four -Stage Model (2001)		Cataloging		Transaction	Vertical &Horizontal integration			
UN's Five-Stage Model (2001)	Emerging web presence	Enhanced web presence	Interactive web presence	Transactional web presence		Seamless web presence		
Gartner's Four-Stage Model (2000)		Web presence	Interaction	Transaction		Transformation		
Deloitte's Six-Stage Model (2001)		Information publishing/ dissemination	"Official" two-way transaction	Multi-purpose portals	Portal personalization &clustering of common services	Full Integration &enterprise transaction		
Hiller &Belanger's Five Stage Model (2001)		Information	Two-way communication	Service and financial transaction	Vertical and horizontal integration		Political Participation	
MoonFive Stage Model (2002)		Simple information dissemination	Two-way communication	Service and financial transaction	Vertical &horizontal integration		Political participation	
World Bank's Three Stage Model (2002)		Publish	Interact	Transact				
Chandler &Emanuel's Four Stage Model (2002)		Information	Interaction	Transaction		Integration		
Howard's Three Stage Model (2001)		Publish	Interact	Transaction				
UK's Five Stage Model (2001)	Basic site	Electronic publishing	Interactive e-publishing	Transactional website				Joint-up e-governance
PPR's Four Stage Model (2006)	Cultivation		Extension	Maturity		Revolutionary		

West's four stage model (2000)		Billboard		Partial service delivery		Full integrated service delivery	Interactive democracy with public outreach & accountability	
Watson &Mundy's Three Stage Model(2001)		Initiation		Infusion		Customization		
Siau &Long's Five Stage Model (2005)		Web presence	Interaction	Transaction	Transformation		E-democracy	
Accenture's Five-Stage Model (2003)		Online presence	Basic capability	Service availability	Mature delivery	Service transformation		
Asia Pacific's Six Stage Model (2004)	Setting up an email system & internal network	Enabling inter-organizational &public access to information	Allowing two-way communication	Allowing exchange of value			Digital democracy	Joined-up government

2.5 Comparative Analysis of E-Government Implementation Models

The most popular e-government implementation models are analyzed and Table 2.2 highlights all the properties and characteristics of the previous e-government implementation models. Each model has several characteristics and extent of interest regarding technical and non-technical issues. This Table 2.2 is generated based on Table 2.1.

- Consideration for Technical Issues: This is the second characteristics in Table 2.2 that focuses on e-government's implementation concerning the technical issues. The technology related issues addressed here are security issues, technology infrastructure and computer skills.

- Consideration for Non-Technical Issues: Here it focuses on the non-technical issues that affect the progress of implementation. The non-technical issues here that are related to society and people include cultural ethics, legal regulatory and economical issues.

- Model Focus: This is the final characteristic that shows what was adopted on the e-government's implementation models by highlighting the areas of concentration for each model.

Table 2.2
Properties and Characteristic of Previous E-government Implementation Models

Models	Consideration for			Model Focus
	Technical Issues	**Non-Technical Issues**	**Political Changes**	
Layne and Lee Model	✓	✓		Focuses on functionality.
UN/ASPA Model	✓			Focuses on web-based and functionality.
Gartner Model	✓			Focuses on citizen-centric and partly functionality which is grounded on technology, organizational and managerial feasibility.
Deloitte Model	✓	✓		Focuses on citizen-centric.
Hiller & Belanger Model	✓			Focuses on functionality.
Moon Model	✓		✓	Focuses on functionality.
World Bank Model				Focuses on functionality and citizen-centric.
Chandler & Emanuel Model	✓		✓	Focuses partly on citizen-centric and functionality.
Howard Model				Focuses on functionality and citizen-centric.
UK Model	✓	✓	✓	focuses on citizen-centric and partly on functionality, based on technology organizational
PPR's Four Stage Model (2006)		✓		focus to include the front-end of government with a focus on the activity and customer-centric approach rather than the technological capability
West Model	✓	✓	✓	focuses on functionality and citizen-centric
Watson & Mundy Model		✓		focuses on the human activity infrastructure of e-government
Siau & Long Model	✓	✓	✓	focuses on citizen-centric and partly on functionality, based on technology organizational and managerial feasibility
Accenture Model	✓	✓		Focuses on citizen-centric and partly on functionality
Asia Pacific Model	✓	✓	✓	Focuses on citizen-centric and functionality.

Table 2.2 gives an overview of the characteristics of most of the popular e-government models and their concerns for issues of technical and non-technical as well as the extent of the impact of these models to political changes and focus on areas of e-government implementation. Therefore, the Asia Pacific Model was used as a baseline model in develop e-government implementation model for this study. That can be used in developing countries such as Jordan as it contains the higher level of characteristics and high proportion of implementation through its stages. The missing stages of the Asia pacific model from the table 2.1 are substituted by stages of other model to ensure all the 8 stages are competed.

2.6 E-Government in Developing Countries

E-government is one of the most important features of the revolution of ICT (digital revolution) during the last decade (Amoretti, 2006). E-government is a technological innovation that offers citizens improved and more equitable access to government services (Alomari et al., 2014; Alateyah et al., 2012). Today e-government is a reality that has been designed and implemented by developed countries to suit the social and cultural systems of these countries (Rokhman, 2011). Nations around the world have embraced this innovation. However, research on e-government adoption has, to date, focused on developed countries in the Western World (Rajapaksa, 2011). While developing countries are currently building on the success of e-government's adoptions, e-government initiative becomes priority for many governments in the developing countries and amazingly spreading rapidly, as a

means to reform and to modernize governance (Mohamed, 2011; Sarkar, 2010; Eilu, 2009).

The implementation of e-government has the potential to improve the lives of 80% of the world's population living in developing countries (Chen et al., 2006; Chaijenkij, 2010). E-government can be an effective tool for governance reform in developing countries to provide a better quality of life to the citizens and the businesses, increase transparency and improve efficiency of the government (Davcev et al., 2013; Madzova et al., 2013). Therefore, the efforts of these countries are not only focused on the issue of digitalization in itself, but also on the reorganization of the government services and participation treated through ICTs (Alateyah et al., 2012; Schuppan, 2009). This includes using electronic means such as internet technology to increase e-government influence, efficiency to improve the relationship between private-citizen and the public sector through efficient and profitable delivery of information (Hamilton et al., 2011), as well as knowledge in 24 hours a day, 7 days a week, without the need to wait in lines (Kumar & Best, 2006; Rokhman, 2011).

ICT tools offer enormous potential for implementing e-government (Masrom, 2013). However, developing countries are still active in exploring the potential of e-government (Liaquat, 2007). E-government implementation in many developed countries is in the final (advanced) stages, where the e-government initiatives are more effective and more sophisticated in developed countries in terms of meeting the citizen's needs through the new electronic channels such as the internet

services(Rokhman, 2011; Salem, 2007). While many developing countries have just started e-government's implementation or they are in the early stages for implementing e-government (Chen et al., 2006). Most of the existing e-government initiatives in developing countries have failed and we delayed in its implementation and in providing government services to the citizens (Nurdin et al., 2012; Shahkooh et al., 2008).

There are many reasons for the failure of e-government implementation in developing countries such as the lack of ICT infrastructure, internet access, skills needed for the use of e-services (digital divide), and low trust as well as lack of awareness in e-government technology (Al-Sobhi & Weerakkody, 2010; Heeks, 2003; Sahay & Avgerou, 2002). These countries only focus on the relatively easy stage of e-government implementation: the development of websites, piloting few applications and putting these services over the Internet (Basu, 2004).

Kim and Mathews (2010) as well as Shakya and Kharel (2013) have asserted the importance of having good internet infrastructure and services as many e-government implementations are still at early stages. They emphasize the needs to provide better technology infrastructure so that the governments can improve its effectiveness and to eliminate inefficiencies that are often perceived as associated with bureaucracies. It is also crucial for the government to be more flexible in delivering its services to the citizens (Pina et al., 2010; Torres et al., 2005).They also stress the need to eliminate some of the difficulties that citizens often complain about. The success of e-government should have the pre-defined goals as well as

early strategies of providing the greater access for its citizens to its services, while at the same time works to decrease the costs of services delivery (Kumar et al., 2007).

2.6.1 **Benefits of E-government Implementation in Developing Countries**

E-government is one of the most significant applications of ICT and the most powerful tools to spread digital divide across different social segments of any country especially for developing countries (Schuppan, 2009; Hossan et al., 2006). Governments worldwide have realized that there are many benefits of e-government (Lee & Lei, 2007). The concept of e-government has emerged as a result of the recognition that there are significant benefits which can be achieved through the application of information communication technology in the government functions (Alsohybe, 2007; Odat & Khazaaleh, 2012).The governments in the developing countries have always been trying to implement e-government in order to benefit from these advantages, where the benefits from the use and implementation of e-government are the same for both developing and developed countries (Ndou, 2004; Abdalla, 2012).

E-government, if implemented appropriately will certainly support good governance, improve current government services, increase accountability, lead to more exact and effective services, and reduce administrative costs and the reduction of time on repetitive tasks for government employees (Shareef et al., 2010; Millard, 2004). E-government can facilitate greater transparency in the administration of government and provides better services, allow people, businesses and government employees to gain access to government services 24 hours a day, 7 days a week as these can

promote progress in developing countries (Basu, 2004; Backus, 2001). In addition, e-government also allows governments to provide better services through the creation of new ways to interact with the government by using ICT such as email, online meetings, social media network and forums for voicing opinion, share concerns, online transactions, and online voting (Linders, 2012; Alonso et al., 2009).

The following discusses the benefits of the implementation of e-government that have been already mentioned in the existing body of literature, and are summarized in Table 2.3.

Table 2.3
Benefits of E-government Implementation

Perspective	Benefits	Source
(Internal Objectives) Government and Employees	• Reducing mistakes • Saving time and money • Improving the quality of services • Increased efficiency • Increased transparency, anticorruption and accountability • Improve the internal organizational processes of governments • Driver for other companies	Anastacio et al. (2013); Krishnan et al.(2013); Syamsuddin(2011); Souqia (2011); Kanaan (2009); Foley & Alfonso (2009); Foley & Montfort (2008); Islam (2008); Dada (2006); Akman et al. (2005); Basu (2004)
(External Objectives) Citizen and Businesses	• Services available 24/7. • Improved interactions with businesses and industry& citizens • Bridging the digital divide • Increased work efficiency • Reducing bureaucracy	Krishnan et al. (2013); Yanqing (2010); Zhang & Hsieh (2010); Kalsi et al. (2009); Kanaan (2009); Mphindi (2008); Kumar et al (2007); Dada (2006); Ndou (2004); Sukasame (2004); Bhatnagar (2002);Yanqing (2010)

The benefits listed in Table 2.3 are classified into two groups, from government and employees perspective (Internal Objectives) and from citizen and businesses perspective (External Objectives). From Internal Objectives, the government internal organizational processes can be improved by using the ICT tools as one of the main benefits of e-government to reduce errors and to increase efficiency in e-government processes, which will lead to saving time and money for the government (Anastacio et al., 2013; Islam, 2008). Most of countries around the world seek to implement e-government by automating the government functions, to improve productivity, increase the level of services to citizens efficiently as well as increase the government staff productivity (Krishnan et al., 2013; Akman et al., 2005).

The use of ICT tools in government functions will also lead to facilitate the exchange of confidential information between the government departments and agencies, to reduce corruptions and increase transparency in government functions (Foley & Alfonso, 2009; Basu, 2004). The uses of ICT will not demand users to ask for any bribe when doing their job (Foley & Montfort, 2008). More specifically, e-government helps in reducing overhead from fewer offices and less paper work management (Souqia, 2011). This will result in the simultaneous reduction of errors in e-government's agencies functions, and improve the quality of services (Krishnan et al., 2013). E-government also aims in helping to strengthen government as a drive toward effective governance and increased transparency to better manage resources, as well as economic and social development of the country (Syamsuddin, 2011; Islam, 2008). Furthermore, the implementation of e-government in developing countries will increase the responsibilities of the government itself, allowing more

effective services to be monitored and controlled (Anastacio et al., 2013; Foley & Montfort, 2008; Dada, 2006).

From the External Objectives, the main objective of the e-government is to improve the quality of services provided to the citizens and the businesses and to also reduce bureaucracy and to offer access to government services 24/7 (Zhang & Hsieh, 2010; Ndou, 2004).E-government gives a chance for public sector agencies to increase their services and delivery capabilities to the citizens, increase the economic competitiveness and improve the competitiveness in the delivery (fast and cheap) e-government services (i.e. the ability to produce results that match the objectives) of the government policies in areas such as education, national security, health, and public safety (Yanqing, 2008; Kumar et al., 2007; Sukasame, 2003).

According to the Sukasame (2003), other benefits of implementing e-government can lead to an increase in the citizens' participation through the growth in the usage of technology by citizens in their daily lives and getting the e-government information 24 hours a day, 7 days a week, through the use of ICT tools such as internet and email (Kalsi et al., 2009; Kanaan, 2009). For example, citizens can use interactive features such as web comment forms and online consultation to provide the government with their views about public policy, or they may be able to participate more fully in the government’s decision making processes (Anastacio et al., 2013; Yanqing, 2010). Electronic delivery of services will increase transparency between the government and the citizens, and provide the citizens with the opportunities to submit their suggestions and ideas online and access to information

via forums and online communities (Mphindi, 2008; Bhatnagar, 2002). These enable them to understand the country policies, where and how their taxes are spent, how decisions are made, and public participations in decision-making through e-voting, thus empowering citizens through ICT (Yanqing, 2010; Zhang & Hsieh, 2010).

2.6.2 **Barriers of E-government initiatives in Developing Countries**

Many e-government initiatives in developing countries are still in their primitive strategic phase of implementation (infancy) (Nabafu & Maiga, 2012; Ebrahim & Zahir, 2005). Despite the potential benefits of e-government's implementation in developing countries, many studies such as Nkwe (2012) and Alateyah et al. (2012) as well as Almarabeh and AbuAli (2010) showed that a large proportion of initiatives to implement e-government around the world in developing countries did not succeed in achieving their goals as e-government is still facing many challenges in the development process. Developing countries are facing many key challenges and barriers (compared to developed countries) that would contribute to e-government's implementation failure (Li & Elhadi, 2013; Nabafu & Maiga, 2012).

There are overall agreements from all countries and researchers on the existence of the needs for further and deeper study in order to understand the real reasons for failure of e-government in developing countries, and take these problems and difficulties in their accounts to overcome the obstacles and implement e-government successfully (Elkadi, 2013; Dzhusupova et al., 2011; Dada, 2006; Ebrahim & Irani, 2005). Despite the high percentage of e-government projects that failed to reach their targets, the world is witnessing a global agreement that recognizes that there is still a

possibility for e-government initiatives to meet all the objectives (Almarabeh & AbuAli, 2010; Mphindi, 2008).One of the only possible ways for these initiatives to be achieved is through access to a better understanding of the obstacles and challenges faced, and then to work on ways to overcome these obstacles (Nkwe, 2012; Almarabeh & AbuAli, 2010 and Ndou, 2004).

Researchers classified e-government barriers for developing countries into many categories. Dos Santos and Reinhard (2012) classify e-government barriers into political, organizational, financial, or technical nature. Obeidat and Abu-Shanab (2010) have classified e-government barriers into strategy, technology, organizational, policy, legal and human. Ndou (2004) classifies e-government barriers into ICT infrastructure, policy issues, change management, partnership and collaboration. Lam (2005) in his study classifies e-government barriers into four parts: strategy, technology, policy and organization. In addition Kanaan (2009) in his research also classifies the barriers into technical, national, social and organizational, where Kanaan's classification is based on Lam (2005) study, Kanaan also added social barriers to the classification because it contains many social barriers such as lack of education, language and digital divide that relate to users as key elements in the success or failure of e-government.

In this study, Lam's classification of barriers will be used to classify the barriers and challenges of e-government implementation in developing countries as many researchers have classified the barriers using this approach.

2.6.2.1 **Strategy Barriers**

One of the main barriers for an e-government's implementation initiative in most developing countries is the establishment of a suitable and context-tailored strategy to achieve long term goals (Pardo, 2012; Kanaan, 2009). Every initiative needs to be entrenched in a careful, analytical and dynamic strategy (Asgarkhani, 2005). This is a difficult task for the governments in developing countries, which require attention to many aspects and processes, holistic vision, and long-term's objective focus (Kanaan, 2009; Lam, 2005). Governments must have a clear strategy to overcome the barriers to change. According to Nkwe (2012), Obeidat and Abu-Shanab (2010) and Lam (2005) strategy barriers can be explained in four points:

1) The lack of clear goals and objectives for the implementation of e-government is an issue. The lack of common goals and clear objectives among government agencies have created confusion among government agencies and departments, as well as become part of the conflicts in the definition of work roles, responsibilities, and lines of ownership in e-government (Pardo, 2012; Obeidat & Abu-Shanab, 2010). E-government goals and objectives can be achieved by senior management staff through multiple government agencies, each potentially with their own agenda for e-government (Nkwe, 2012). The government recognizes this issue and they consider the e-government policies to be an integral part of overall national socio-economic development and government transformation (Lam, 2005).

2) Lack of ownership and governance. This barrier appears based on the existence of previous barriers. The lack of goals and objectives certainly contribute to issues regarding ownership and governance (Dzhusupova et al., 2011). The presence of a large number of stakeholders is the main reason for the lack of ownership and governance (Lam, 2005; Ndou, 2004).

3) Lack of implementation guidance. While the central government establishes a vision of e-government, agencies and other management require a guide on how to turn and translate this vision into a more realistic specification for the services of e-government. Without guidance, it is difficult to establish good e-government (Nkwe, 2012; Kanaan, 2009; Lam, 2005).

4) Financial issue. Lack of funding is the key issue in e-government. Government agencies may face difficulties in obtaining the necessary level of funding, especially if the funding is directed by a pool of funding that is designed for multi-service initiatives (Khanh, 2014). Issues and challenges can arise in how those funds are managed and released. Lack of financial support for the e-government implementation will lead to a failure of e-government implementations (Obeidat & Abu-Shanab, 2010; Lam, 2005).

2.6.2.2 **Technology Barriers**

The lack of infrastructure and integration architectures, variation in architectures and some legal aspects, like security and privacy are some of the main challenges that cause failure to implementation of e-government in developing countries (Alomari et

al., 2014; Lam, 2005). Many developing countries suffer from the digital divide, and are not able to deploy ICT infrastructure suitable for the implementation of e-government (Kanaan, 2009; Ndou, 2004). However, ICT infrastructure does not only consist of telecommunications equipment, but it requires e-readiness and ICT literacy (Obeidat & Abu-Shanab, 2010).

According to Haque et al. (2013) and Chen et al. (2006), selecting the right level of technology and the development of infrastructure is a important requirement in e-government initiatives and projects, where the development of basic infrastructure can lead to reaping the advantages of new technologies and communications tools is essential for implementing e-government. Different access methods such as remote access by smart phone, satellite receivers, social media, kiosks and other access methods need to be taken into consideration by governments and their employees (Mundy & Musa, 2010). The technology barriers that lead to the inability to perform transactional activities and other stages of e-government will also be reduced (Schwester, 2011; Ndou, 2004).Technology barriers also include incompatible data standards as a fundamental requirement in e-government for seamless fashion in data exchange (Dos Santos & Reinhard, 2012; Crichton et al., 2009).

Inflexibility of legacy systems and different security models have a role in contributing to the failures of e-government implementation, where security model is identified as a main barrier in the technical combination of e-government system (Dos Santos & Reinhard, 2007). Security modes are critical not only for delivering

services but also for building citizen confidence and trust (Almarabeh & Abu Ali, 2010; Lam, 2005).

2.6.2.3 **Policy Barriers**

The success of e-government's implementation depends on strong ICT laws and policies enacted by the government, although many rules, policies, laws and legislations are well established in the developed world (Dos Santos & Reinhard, 2012). In many developing countries, e-businesses and e-government laws (ICT laws) are not yet available for the successful implementation of e-governments (Kanaan, 2009; Lam, 2005).

The implementation of e-government initiatives and operations is highly dependent on the responsibilities of the governments for adopting a proper and relevant frameworks for the e-government process that will protect sensitive information related to citizens and have clear data possession to achieve the goals of the e-government (Schwester, 2011; Obeidat & Abu-Shanab, 2010).

For the success of an e-government initiatives, there must be a wide range of rules and policies governing aspects of e-government such as a range of new rules, policies, laws and legislative changes to address electronic activities including electronic signatures, electronic archiving, freedom of information, data protection, computer crime, intellectual property rights and copyright issues (Dwivedi et al., 2012; Kanaan, 2009; Lam, 2005).

2.6.2.4 **Organisational Barriers**

Organizational barriers are one of the challenges of the development of advanced electronic services and e-government implementation (Ebrahim & Irani, 2005). The lack of organizational motivation is an important issue in many agencies in the e-government because many agencies do not accept this change (from traditional government to e-government) (Dwivedi et al., 2012). Previous studies divide organizational barriers in too many sections. Dos Santos and Reinhard (2012) classify organizational barriers for developing countries to many categories: (1) lack of experiences and absence of a willingness to share, (2) level of skills of the personals involved in the processes; and (3) organizational culture. Nurdin et al. (2011) classify organizational barriers to a few categories: unclear vision and strategy, ambiguous missions and goals, lack of coordination, lack of partnerships, organizational structure, and inappropriate change management. Lam (2005) classifies organizational barriers to a few components: lack of agency readiness, slow pace of government reform, absence of an e-government champion, legacy government processes and lack of relevant in-house management as well as technical skills. In this study, where majority of the work is based on Lam's (2005) work, organizational barriers are classified into several categories: the lack of organizational motivation, slow pace of government reforms, lack of relevant in-house management and technical skills and change management. The organizational barriers are as follows:

1. Lack of organizational motivation: Many government agencies are not ready for the challenges of e-government (Dos Santos & Reinhard, 2012). The fact

that the e-government is a relatively new concept, many government agencies are still in the learning process of what e-government is, and how it can be implemented within their own agencies (Coursey & Norris, 2008; Lam, 2005).

2. Slow pace of government reforms: E-government is one of the most intensive programmes of change within the public sectors despite this e-government implementation is still slow in government reforms in developing countries (Nkwe, 2012). Some government agencies find it difficult to cope with the speed and pace of reforms (Coursey & Norris, 2008; lam, 2005).

3. Lack of relevant in-house management and technical skills, lack of adequate training, and lack of skills within organizations is of a major concern in the implementation of e-government in developing countries (Kanaan, 2009). This obstacle involves several agencies that did not train their skilled staff with ICT skills needed to execute e-government initiatives as well as the lack of computer training program (Dos Santos & Reinhard, 2012; Lam, 2005). This problem is apparent in the developing world where unskilled staff and insufficient resources have been major problem for years (Dwivedi et al., 2012).

4. Change management: Change management in e-government's implementation is a structured approach to transitioning individuals, teams, and organizations from the current state to the desired future state (Nograšek,

2012, Weerakkody et al., 2011). Change management refers to the method of managing change and resistant to change, where change management approach includes the procedures established within organizations. It means new work practices, acquiring new way for processing and performing tasks (Nograšek, 2012; Ndou, 2004). E-government if designed correctly, it will save costs, improve service quality and it will also innovate the processes and activities (Nurdin et al., 2011). Culture is a key issue of organizational change and it is a big step towards a higher capacity to change. Employee's resistance to change is a big barrier to successful e-government (Nurdin et al., 2011; Lam, 2005).

2.7 Jordan E-government Implementation

2.7.1 **Overview of Jordan**

Jordan is one of the developing countries, located in the heart of Middle East at the north-western part of the Arabian Peninsula (Almarabeh & Adwan, 2013). It has an area of about 92,300 km square feet (34, 445 sq. miles), bordered on the west by Israel/the Dead Sea and the Palestinian National Authority, on the north by Syria, on the east by Iraq, and on the south by Saudi Arabia. Jordan is mostly deserts and nearly 92% of its land is arid hills and mountains. Amman is the capital city of Jordan with a population of 2 million (CIA, 2011; Alomari et al., 2010). Jordan is a comparatively small country of 6.5 million people comprising of 52% males and 48% females. The country has young population with 36% of the population under

the age of 15, 59.4% between 15 to 64 years, and only 4.6% over the age of 64 (Kanaan, 2009; Sharp, 2010).

The Kingdom of Jordan is a constitutional monarchy with a political system of three independent branches under the monarchy reign: the government (cabinet), the national assembly, and the judicial system (Atteridge, 2012). The majority (98%) of Jordanians are Arabs, with some Armenian and Circassian (known locally as Cherkess or Jarkas) minorities. Islam is the official religion about 92% of the population is Muslim, with 6% Christians. Figure 2.6 shows Jordan's geographical location and the main cities (Planet & Walker, 2012).

Figure 2.8. Jordan Geographical Location

The country is divided into 12 provinces with Amman as the capital. Jordan became fully independent in 1946, after it was mandated and ruled by the British Monarchy for more than 25 years. In February 1999, King Abdullah II succeeded his father, King Hussein after his death on the throne of Jordan. He has undertaken a substantial social and economic reform programs. He stresses and demands the successive government to undertake and focus on reforming the social and economic domains through the development of health care, housing for civilians and military personnel's, better the educational system and security for the citizens, and development of the country through providing technology in all government sectors (Group T. W. B, 2014; Kanaan, 2009).

2.7.2 **E-government in Jordan**

The Hashemite Kingdom of Jordan is one of the few countries in the Middle East region that has started to implement e-government as a new technology-based service in order to improve government services to its citizens (Djeflat, 2009). Nevertheless, it is still new for e-government to be implemented successfully in most Arab countries (Abdalla, 2012; Salem, 2006). The Arab world constitutes 5% of global populations, and most Arab countries are considered less developed economically, socially, and politically. The countries in the Arab world share many similarities on social, political and cultural features. The Arab region in general is characterized by high percentage of illiteracy (23%), high unemployment (15%) and poverty (except in Gulf Countries) (Abdallah & Fan, 2012).

In terms of e-readiness, Arab countries vary widely. Some countries are progressing well and enjoying relatively high levels of ranking in the UN's e-readiness assessment and on the other hand, some countries are in the bottom of the list (Salem, 2006). Figure 2.7 illustrates e-readiness across the Arab World. Although many of research studies on the e-government's implementation in the Arab world were conducted, but still it far lessees than studies conducted in developed countries (Abdalla, 2012; Kanaan, 2009; Salem, 2007).

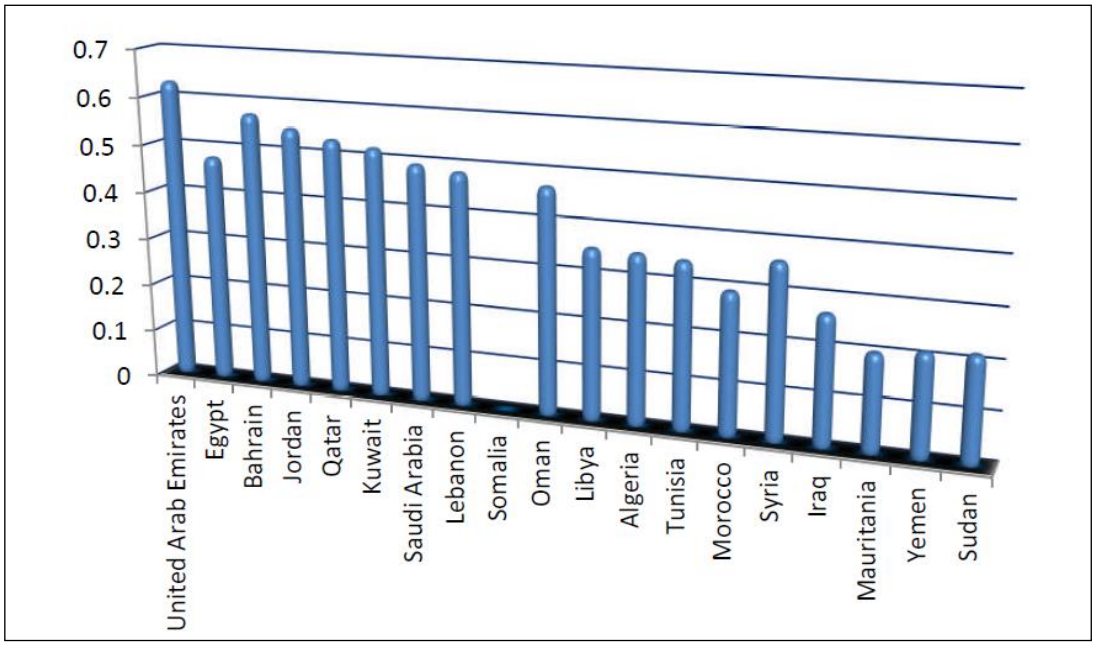


Figure 2.9. E-readiness in the Arab World (Adapted from UN, 2008)

E-government in Jordan is a national initiative program that started with the role of King Abdullah II to the throne of the Hashemite Kingdom of Jordan, where this initiative was initiated in November 2000 (Al-Onizat et al., 2013; Abu-Samaha & Abdel Samad, 2007). The vision for the social and economic growth in Jordan are aimed at driving the nation's transformation into a knowledge society which is the

competitive advantage for the dynamic economy to achieve greater efficiency in government services and to enhance the performance of its public and private sector organizations (Alawneh et al., 2013; Tadros et al., 2008). These government services are provided to citizens at all segments of society easily, quickly, accurately, efficiently and transparently. In supporting this vision, the Jordanian government has committed long-term initiatives to implement e-government (Obeidat & Abu-Shanab, 2010; Mohammad et al, 2009).

Jordan has taken some major steps towards transforming the country into the electronic age to become a major player in the international ICT field (Mofleh, 2008). The ICT initiatives in Jordan started with the effort to use technology initiatives by the government, which is the most important step towards a realistic goal in developing ICT through the active participation between the public and private sectors, to work together to create a dynamic and workable plan, to streamline government procedures and make information and services available to citizens on the Internet (Al-Onizat et al., 2013; Al-Omari, 2006; Ciborra & Navarra, 2005).

The e-government initiatives depend on the use of the ICT tools to attain the national objectives and transform the country to "e-Jordan", working towards the goal to improve Jordan's IT sector and maximize its ability in order to compete in local, regional and global markets (Mofleh, 2008; Al-Omari, 2006). This process requires a point of contact that will coordinate efforts among government agencies and support them. Therefore, Jordan has established the MoICT to take the lead for facilitating

and supporting the implementation of e-government, based on the needs of government ministries as well as agencies (Al-Onizat et al., 2013; Tadros et al., 2008).

E-government initiative is promising for Jordan to move forward in the twenty-first century to enable it to bridge the gap between Jordan and it is the more developed counterparts within the region (Obeidat & Abu-Shanab, 2010). The government of Jordan is currently leaping up the e-government readiness rankings although its maturity level is not yet at the European level (Irani & Codner, 2007). It aims to become "Singapore of the region" in the adoption of new ICTs and utilizing these innovations in all spheres of its growing lives (Elsheikh et al, 2008). Therefore, the Jordanian government is on an ongoing process to make a successful transition environment for instillation and utilization of ICTs in the country (Mofleh, 2008). Figure 2.8shows the growth of ICT sector in Jordan.

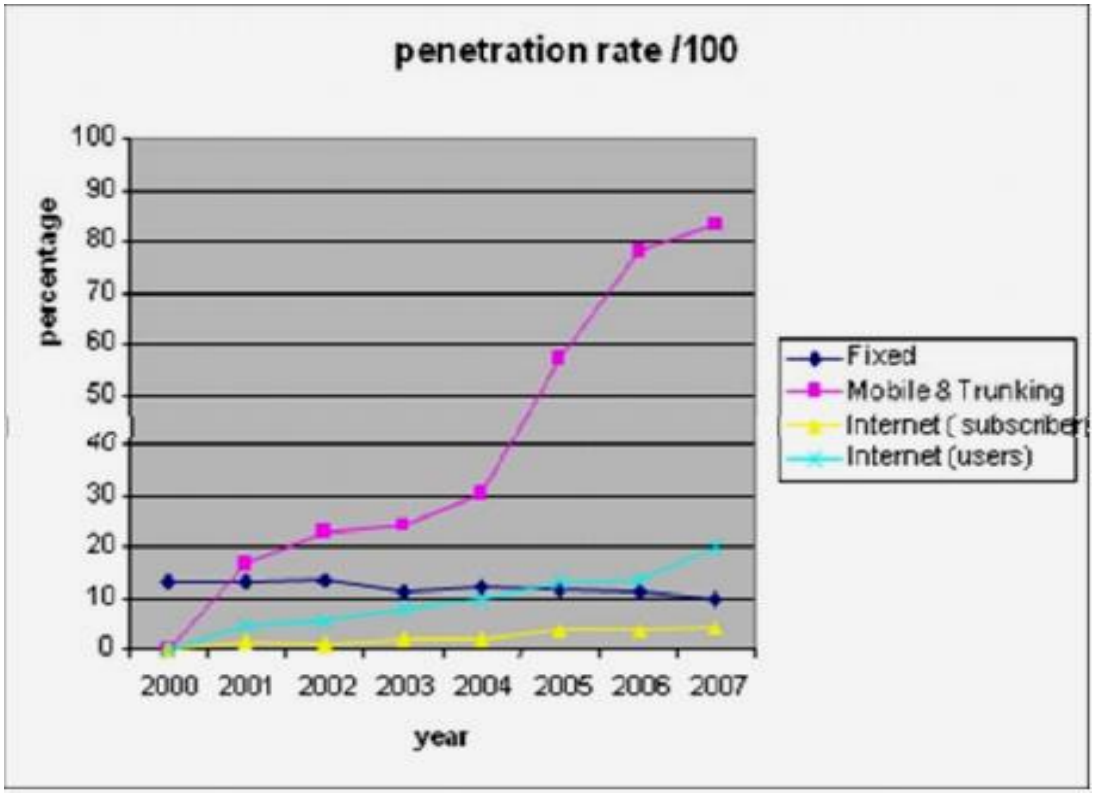


Figure 2.10. ICT Penetration Rates per 100 Inhabitants as % (Adapted from Hwang & Mohammed, 2008)

The Jordanian government is currently working within a special vision to be an essential attributor to e-government for social and economic development through access to government information, public-private partnerships and improved public services, communications and transactions with the government regardless of location, economic status, education or informational capacity (Obeidat & Abu-Shanab, 2010; Hwang & Mohammed, 2008). The Jordanian government will continuously drive a mechanism to make changes in Jordan by delivering better services and better government. Thus, the Jordanian government has begun a main long-term initiative to implement e-government (Mohammad et al, 2009).

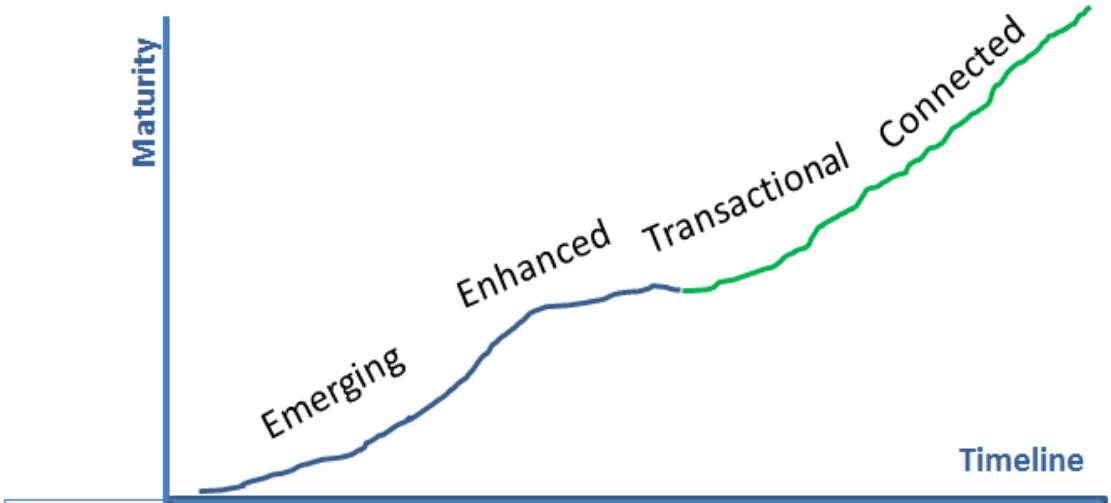
2.7.3 **The Stages of E-government Model in Jordan**

E-government has been seen to be a catalyst for the development and progress of countries such as Jordan. The main objective of implementing e-government is to enhance the productivity of public sector institutions (Nkwe, 2012, Khasawneh et al., 2011). According to Layne and Lee (2001) e-government is the phenomenon of evolution, effective for all governments around the world and contributes to the progress of peoples and countries Besides the productivity, ease of communication between the government departments and the delivery of government services to citizens and companies are considered timely and very accurate method (Elsheikhet al., 2008; Al-Omari, 2006).

In the context of e-government's implementation, there are several plans and models for implementing e-government correctly and appropriately (Khasawneh et al., 2011). Many models have been described, including three to six stages of e-government's implementation, such as the UN's model, Layne and Lee's model. All of these models show the development of e-government as an evolutionary process (Alkhaleefah et al., 2010).

The implementation of e-government in Jordan is based on international best practices by western countries such as the UK and the USA that have been implementing e-government projects successfully (Kanaan, 2009). Jordan implements e-government by adopting model called the E-government Maturity Model which is based on the UK's E-government Maturity Model. MoICT (2013), Khasawneh et al. (2011) and Elsheikh et al. (2008) have seen e-government

development in Jordan as a process with four basic stages of growth as shown in Figure 2.9, where it describes the implementation of e-government involving four stages: Emerging, Enhanced, Transactional and Connected, where all government services are delivered seamlessly through a one stop portal (MoICT, 2013).



E-Service	2003	2006	2009	2013	2016	2020
G2C &G2B	Online e-Services (15)	Online e-Services (30) on National Portal Official Websites	Online e-Services (55) on National Portal Enhanced and new official websites	Online e-Services (96) M-Services Enhanced and new official websites	Online e-Services (100)	
G2G &G2E			GFMIS, HRMIS, IMIS	E-Procurement		
Institutional	Launch e-Gov. Program Initial strategy	National Strategy (2006-2009) & Roadmap EGSC 70 CIO Units	National Strategy (2014-2016) & Roadmap 37 Additional CIO units	Activate EGSC CIO Council MADA Daleel eGov. Award		
Business		Training for over 10,000 government employees	Training for over 3000 government employees			
Legal			e-Transaction Law amendments draft	E-Participation Policy		
Infrastructure	SGN 14 entities	National Portal SMS Gateway	Mobile Gateway Payment Gateway ESB SGN 73 entities Enhance Portal	Transactional National Portal PKI Cloud Computing Data Model and Open Data Standards		

Figure 2.11. Jordan E-Transformation Current and Target Maturity (Adopted from MoICT, 2013)

However, according to a UN's report (2005) conducted by Hafeez and Sher (2006) and MoICT (2003), the Jordanian government has 95% of the national ministries on-

line, providing all information about the services, but only provides limited interactions between public and government agencies through the e-mail communication messages (Khasawneh et al., 2011). This puts the Jordanian's e-government implementation in between stages II and III phase of the e-government stage model (Alawneh et al., 2013; Alkhaleefah et al., 2010) as shown in Figure 2.11 (Page:83).

2.7.4 **E-government Services in Jordan**

E-government is a national project par excellence. The e-government project in Jordan is distinguished from other Arabian experiments as it is integrated at the national level over the entire Kingdom (Alawneh et al., 2013). The purpose of this program is to enhance the performance of the traditional government in terms of services provision, efficiency, accuracy, time and cost effectiveness, transparency, high level of customer satisfaction, cross-governmental integration, and much more of others to the government (MoICT, 2013).MOICT was assigned to take the lead in coordinating efforts of implementing the e-government initiatives in Jordan, as well as facilitating and providing support whenever needed to government entities participating in the e-government initiatives implementation (Odat & Khazaaleh, 2012). MoICT has established a Program Management Office (PMO) and staffed it with subject matter experts in the areas of project management, change management, risk management, quality management, technical management and support services and other competencies, to enable the MoICT for fully success implementing the E-government Program (Alawneh et al., 2013).

The objectives of e-government in Jordan are delivery of services to targeted customer segments (Saleh et al., 2013; Alomari et al., 2012). These services vary in nature and objectives. Some are designed for outside (for example, designed for external customers) and some are designed for inside (for example, to improve the efficiency of the government) (Odat & Khazaaleh, 2012). Activating role of e-government in the real life, will lead to a quantum leap in Jordan through the provision of better services to citizen and apply the government in the best way (Alomari et al., 2012). To achieve this, it has developed e-government in Jordan, the main objectives and measurable:

1. Improve the quality service delivery and increase speed of government's interaction with citizens and businesses as well as among government entities.

2. Improve the services access channels by using new accessible channels to responsiveness to beneficiaries needs.

3. Increase transparency of government through increase the availability of information and accessibility to services.

4. Save time and money by improving efficiency in the treatment of the government, in part through the use of modern communication technologies, and the use of common technical standards, policies and structure of the federal, as well as contributing to the financial reform in the public sector.

5. Create a positive, spin-off effect on the Jordanian society through promoting of the ICT skills development within the government, businesses and households to enhance Jordan's economic competitiveness.

E-government program in Jordan has already embarked on the delivery of several priority Shared Services in order to ensure quick wins to the e-government as well as promote fast implementation of standards and specifications (MoICT, 2006). This services aim to contributing to the organization of a required collection of services for expediting e-government in Jordan (Saleh et al., 2013). These Shared Services aim at contributing to the establishment of a required bundle of services for expediting e-government in Jordan. The major steps are following: (1) E-government Portal, (2)E-government Contact Center, (3) Payment Gateway, (4) Public Key Infrastructure (PKI), (5) Secure Government Network (SGN) as well as (6) the E-government Enterprise Federated Architecture (MoICT, 2013). The following presents an overview on these initiatives:

1. E-government Portal: The E-government Portal (www.Jordan.gov.jo), launched for the first time in Sept. 2006 as the first main service delivery channels, that provides comprehensive information and an entrance gate to all information and services provided 24-hour by government ministries to citizens, businesses and government agencies, Figure 2.12 shown the E-government Portal (Alsmadi, 2011). Each government ministry has taken the responsibility to develop and maintain its own official websites to deliver information and services (Saleh et al., 2013).

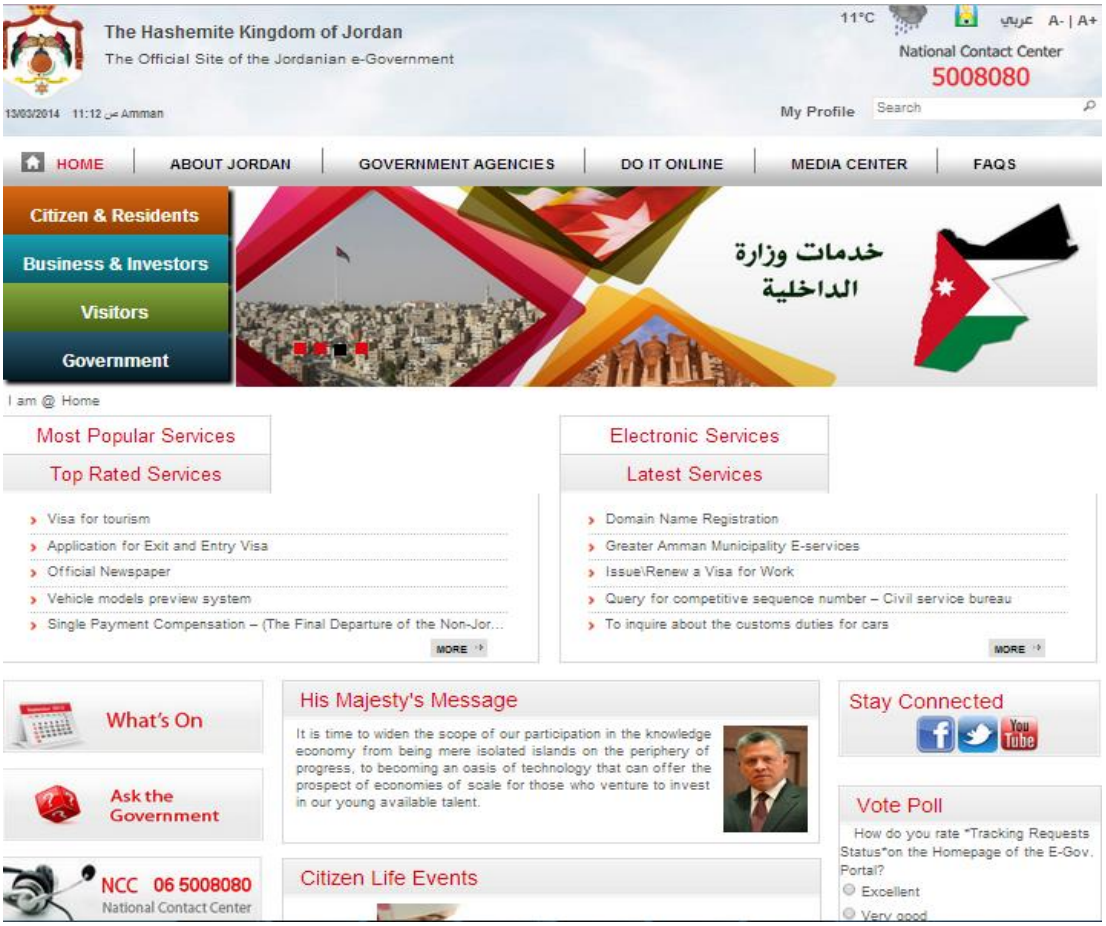


Figure 2.12. Jordan E-government Portal (www.jordan.gov.jo)

2. Contact Center: The National Contact Center for Government Services, an essential component of e-government in Jordan (MoICT, 2006). The National Contact Center for Government Services was established by the e-government program as a focal contact center to provide support for the different government entities through various channels (Alsmadi, 2011). It operates according to best technical specifications and security measures (May et al., 2013).The center provides responding service to all inquiries, complaints, and suggestions raised by the public and users of e-government

transactions (Saleh et al., 2013). Provided contact center services will include: guidelines and standards, shared services, and outsourced turnkey contact center services (Alsmadi, 2011). The contact center also will complement the portal and existing face-to-face channels by providing an alternative access channel for government information and services (phone, e-mail, chat, SMS Service, and other means of effective communication with the community (Saleh et al., 2013). Figure 2.13 shown the National Contact Center services.

Figure 2.13. The National Contact Centre services

3. The Payment Gateway: the Payment Gateway is an important shared service in Jordan, aimed at enabling transactional e-services as well as generally improving services delivered to e-government users (AlFawwaz et al., 2013).

Taking into account the availability of technology to government agencies as well as the payment methods available on the internet in Jordan, the solution allows users to pay online for e-government services (Alsmadi, 2011). The government is considering a collaborative effort with the private sector for implementation and operation of the Payment Gateway (Saleh et al., 2013).

4. Public Key Infrastructure (PKI): Information Security is essential for enabling in e-government initiatives in any country. It is a high priority to: (1) develop an information Security roadmap for e-government; (2) issue Information Security policies for the government of Jordan; and (3) develop and apply information security standards, practices and measurements (Alkhaleefah et al., 2010). PKI is one of the essential elements of security for e-government initiative. In fact, PKI consists of a set of enabling technologies and support the people and processes that allow the government to safely perform specific functions and services. PKI is vital for the delivery of secure end-to-end e-government services (AlFawwaz et al., 2013).

5. Secure Government Network (SGN): The national data network (also referred to as the Government National Backbone - GNB) is the development of the existing backbone network program known as SGN (Secure Government Network). GNB is the backbone of the security program SGN (Secure governmental network) (Alkhaleefah et al., 2010). It is aimed to interconnect all governmental entities together and link them to the E-government Enterprise Federated Architecture Infrastructure and related

shared services. Two phases of the SGN project were completed, where were linked 12 from government departments. The third phase is still under processing, where this phase will connect another set of 30 government departments, the national data network will be developed in parallel that will optimize the government owned infrastructure such as fiber optics and active equipments (AlFawwaz et al., 2013).

6. E-government Enterprise Federated Architecture: The E-government Enterprise Federated Architecture forms the e-services framework which applies common or shared architecture standards across all government, which will be reflected on the uniqueness and the diversity of the government entities, while providing interoperability (Almarabeh & AbuAli, 2010). The enterprise federated architecture will take in consideration a large number of projects to build infrastructure services based on their importance and the scale. Service Oriented Architecture through the Enterprise Service Bus and the Identity Management systems will be included in enterprise federated architecture as well (MoICT, 2006).

2.8 Theories in E-Government Studies

There are several theories that were used in e-government research. This section will discuss the theories used for this study.

2.8.1 **Social Technology Theory (STT)**

STT was initially developed by Bostrom and Heinen (1977). It is defined as: "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 is embedded" (Scacchi, 1982. p. 3). STT states that systems consist of social and organisational elements as well as technical elements, and emphasizes that successful systems require the simultaneous configuration of both 'technical' and 'organisational' and 'social' aspects of the system.

Cummings (1994) explained that the STT "focuses on the interdependencies between and among people, technology and environment" [Page. 268]. Based on the STT, the categories of factors for successful e-government implementation in this study are organizational factors, technical factors and people factors.

Therefore this study will use STT to help understand the factors that can help to improve e-government implementation. Instead the focus is on discovering the factors that can help improve implementation of e-government projects in a developing country like Jordan. The use of technology in government institution requires the same focus on the social factors as much as the technical factors in order to ensure information system success upon implementation (Khanet al., 2011). Government institutions as other organizations also involve management of various resources. The STT theory with the perspective of organization, technology and people will be used to extract the CSF for the successful implementation of e-government initiatives.

2.9 Review on Past Related Works on Critical Success Factors for the Implementation of E-government Initiatives

The CSF method is an effective way to determine the needs for information from organizations and ease the planning of management information systems (Kahreh et al., 2013). The CSF method is to ascertain the directions various e-government related things that should go in the right directions for success in achieving objectives of e-government (Trkman, 2010). The final value lies in the ability to focus on tasks management and activities that must be performed well to achieve success (Khandelwal & Ferguson, 2002). The CSF approach has proven to be beneficial in generating high levels of users' participation and support (Jaesung, 2003). CSFs are important to an organization's current operating activities and to its future successes, extending CSFs in implementation activities, and some critical factors in IS development projects (including the implementation of e-government). If they do not fit well, this will lead to the failure of those IS development projects (Lagzian et al., 2013; Bhatti, 2005).

CSF for e-government implementation differs by countries and areas. Many authors have divided these factors into different categories, for example, Altameem et al. (2006) grouped the e-government's implementation factors into three sets: government factors, technical and organizational factors. The first category, 'Government Factors' involve understanding the vision for the proposed e-government's implementation of the top management support and commitment, appropriate strategy, strong leadership and funding for implementing e-government initiatives. The second category, 'Technical Factors' involve Information

Technology (IT) infrastructure and standards, collaborations between agencies and citizen's relationship management. The last category of factors, 'Organizational Factors', involve policy and legal issues, service quality, rewards system and training.

Wood-Harper et al. (2004) also has divided the e-government implementation factors into three categories: The first category of factors, 'People Factors'. People factors involve the knowledge, ability, skills, awareness as well as attitude that are required for the success of e-government. The second category of factors is the 'Processes Factors'. Process factors are important for the survival of e-government and therefore should be clear, trustworthy and up-to-date. The last category of factors is 'System Factors'. It involves the setting of system that organizations can be dependable, reachable and security. Al-Azri et al. (2010) also classifies e-government success factors into three categories: organizational, user and technology. The first category, organization factors considers elements such as vision, leadership style, management support as well as organizational professional culture. The second category, user factors refers to efficacy of computer, training and awareness. The third category, technology factors involves elements such as user friendly, accessibility, flexibility and security.

There is no standard category for classifying successful e-government factors. In this study, the classified success e-government factors are based on the Socio Technical Theory (STT). STT was initially developed by Bostrom and Heinen (1977). It is defined as*: "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 is embedded" (Scacchi, 1982. p. 3). STT states that systems consist of social and organisational elements as well as technical elements, and emphasizes that successful systems require the simultaneous configuration of both 'technical' and 'organisational' and 'social' aspects of the system.

Cummings (1994) explained that the STT *"focuses on the interdependencies between and among people, technology and environment"* [Page: 268]. Based on the STT, the categories of factors for successful e-government implementation in this study are organizational factors, technical factors and people factors. Most of the factors that may lead to successful implementation of e-government initiatives can be summarized in Table 2.4, which will be discussed further in this section.

Table 2.4
Summary of Success Factors of E-government Implementation in Developing Countries

Categories	Factors	Key Reference
Organization Factors	Vision &Strategy	Al-Rashidi (2010); Shin (2008); Prananto & McKemmish (2007); Chowdhury et al.(2006); Altameem et al.(2006); Ke & Wei (2004); Goings et al. (2003); Burn & Robins (2003)
	Top Management Support (Political Support)	Schwester (2011); Prananto & McKemmish (2007); Altameem et al.(2006); Chowdhury et al.(2006); Ke & Wei (2004); Duquenoy et al.(2003); Wee (2000)
	Leadership Support, Dominance of Politics/ Self Interest	Fan et al.(2014);AL-Kaabi (2010); Al-Sobhi & Weerakkody (2010); Altameem et al.(2006); Sang et al.(2009); Shin (2008); Chowdhury et al.(2006), Lam (2005); Themistocleous et al.(2005)

	Funding	Al-Rashidi (2010); Al-Sobhi & Weerakkody (2010); Esteves & Joseph (2008); Shin (2008); Altameem et al.(2006); Lam(2005); Duquenoy et al.(2003); Goings et al.(2003)
	Organization Structure	Shin (2008); Altameem et al.(2006); Wood-Harper et al.(2004); Duquenoy et al.(2003)
	Change Management	Nograšek (2012), Apostolou et al.(2011); Prananto & McKemmish (2007); Altameem et al.(2006), Chowdhury et al.(2005)
	Policy and Legal Issues	Angelopoulos et al. (2010); Altameem et al.(2006); Gil-García & Pardo (2005); Basu (2004); Huang & Bwoma (2003)
	Reward System	Park et al. (2013); Al-Azri et al.(2010); Altameem et al.(2006); Kim & Lee (2004)
Technology Factors	Information Technology (IT) Infrastructure, ICT	Karunasena (2012); Al-Sobhi & Weerakkody (2010) Al-Sobhi & Weerakkody (2010) Al-Sobhi & Weerakkody (2010) Al-Sobhi & Weerakkody (2010) Al-Sobhi & Weerakkody (2010) Al-Sobhi & Weerakkody (2010) Al-Sobhi & Weerakkody (2010) Al-Sobhi & Weerakkody (2010) Al-Sobhi & Weerakkody (2010); Chowdhury et al.(2006); Altameem et al.(2006), Duquenoy et al.(2003)
	Collaboration	Al-Rashidi (2010); Prananto & McKemmish (2007); Altameem et al.(2006), Scholl (2003)
	Information Technology (IT) Standards	Khanh (2014); AL-Kaabi (2010); Altameem et al.(2006)
	Security	Al-Sobhi & Weerakkody (2010); sinjeri et al. (2010); Schwester (2011); Altameem et al.(2006); Dada (2006); Lam (2005); Wood-Harper et al.(2004); Heeks (2003); Goings et al.(2003)
	Flexibility	Al-Azri et al.(2010); Gebauer & Lee(2008); Goings et al.(2003); Wilson et al. (2002)
	Quality	Lee & Levy (2014); Al-Sobhi & Weerakkody (2010); Altameem et al.(2006)

	Accessibility	Al-Sobhi & Weerakkody (2010); Saatçioglu et al.(2009); Wood-Harper et al.(2004)
	User-Friendly	Bwalya (2009); Wood-Harper et al.(2004)
People Factors	Trust	Al-Rashidi (2010); Al-Sobhi & Weerakkody (2010); Sang & Lee (2009); Gilbert et al.(2004)
	Training	Al-Rashidi (2010); Al-Sobhi & Weerakkody (2010); Sang et al.(2009); Altameem et al.(2006), Hung et al.(2006); Goings et al.(2003)
	User Computer Efficacy	Karunasena (2012); Al-Azri et al.(2010); Esteves & Joseph (2008); Masrek et al.(2007); Lam & lee (2005); Goings et al.(2003); Stephens & Shotick (2002)
	Awareness	AL-Kaabi (2010); AlAwadhi & Morris (2009); Altameem et al.(2006); Chowdhury et al.(2006); Themistocleous et al.(2005); Wood-Harper et al.(2004)
	Resistance to Change	Al-Rashidi (2010); Schwester (2009); Ebbers & van Dijk (2007); Lam (2005)

2.9.1 **Organization Factors**

These factors play a vital role to successfully implement e-government by creating a shared understanding of vision influencing e-government initiatives. The problem is that many governments and civil society organizations in different countries do not adhere to these organizational factors. The organizational factors for successful e-government implementation are as follows:

Vision & Strategy: The clear vision and strategy are key factors in implementing e-government. Successful e-government requires vision and strategy to lead and support the implementation processes and to motivate the government toward

attainment of its goals (Al-Rashidi, 2010; Chowdhury et al., 2006; Altameem et al., 2006).

Top Management Support: Support and commitment from senior management and their teams are important and required throughout the implementation process in order to provide and allocate sufficient resources and to give the motives to work hard, in creating new ideas to speed up the processes, and to face obstacles such as resistance to change (Schwester, 2011; Chowdhury et al., 2006; Ke & Wei, 2004).

Leadership: Strong leadership is one of the vital factors for the success of e-government's implementation. Strong leadership can provide clear vision, direction, security and transparency to employees (Al-Sobhi & Weerakkody, 2010; Altameem et al., 2006). E-government initiatives need a leader who is able to place e-government within a broader reform agenda to motivate people, bolster their confidence and allocate resources (Fan et al., 2014; AL-Kaabi, 2010; Sang et al., 2009).

Funding: E-government initiatives around the world require funding for starting the e-government initiatives. Furthermore, it is the requirement to have sufficient funds to run e-government successfully (Al-Sobhi & Weerakkody, 2010; Esteves & Joseph, 2008). Funding is crucial for the continuation of e-government's implementation. The importance of funding is important in providing the excellent services to citizens by excellent mechanisms of e-government (Al-Rashidi, 2010; Shin, 2008; Altameem et al., 2006).

Organization Structure: Organizational structure is also important in e-government initiatives because it has been a chronic problem in the implementation of e-government. There is a great need to develop conceptual general vision to varied organizations that constitute e-government (Altameem et al., 2006). Therefore, there is a need for deeply looking in to organization structure and to undertake the needed changes if they seem to be necessary in order to accommodate new e-government ideas and practices (Shin, 2008; Wood-Harper et al., 2004).

Change Management: Any government initiative should have included the potential to transform the traditional bureaucracy while change management is not limited to leadership with a project champion (Altameem et al., 2006). But, it also involves changes in patterns of communication and work practices, organizational structures, procedures and processes enabling through the adoption and implementation of ICT (Nograšek, 2012; Chowdhury et al., 2005). The use of incentives to create commitment, ownership of the draft e-government, and the active involvement of stakeholders are vital to reduce employee's resistance to the adoption of e-government (Apostolou et al., 2011; Prananto & McKemmish, 2007).

Policy and Legal Issues: New legal issues continue to arise through e-government's implementation process because e-government is a relatively new concept for its implementation and has very little legal background (Gil-García & Pardo, 2005; Basu, 2004). As a result, the implementation of e-government requires the development of policies as well as a series of legislative changes to be undertaken (Altameem et al., 2006; Huang & Bwoma, 2003).

Reward System: E-government is a new concept for the citizens. It should provide incentives for stakeholders to support the new system (Al-Azri et al., 2010). Employees will be more willing to give their time and effort to support the e-government initiative if top management recognizes and appreciates their contributions at workplace (Park et al., 2013; Kim & Lee, 2004). Therefore, the reward system will eventually motivate participation and boost the production to world (Altameem et al., 2006).

2.9.2 **Technology Factors**

A lot of focus has been given on the technology factors, including the infrastructure, standards, tools and applications required and collaboration between agencies and citizens to enable the government agencies to participate in the implementation of e-government. Technology factors include the following:

Information Technology (IT) Infrastructure: To provide e-government services through the means of ICT will support and enable the implementation of e-government including infrastructure application server environment, its security, data and content management tools, application development tools, operating systems and hardware, as well as systems management platform (Karunasena, 2012; Al-Sobhi & Weerakkody, 2010; Chowdhury et al.,2006).

Collaboration: It is important that the presence of effective communication between government departments and agencies are considered necessary for the implementation of e-government. In order to achieve this, people in the e-

government must exchange information and improve communication by ICT tools such as e-mail and smart phone applications (Al-Rashidi, 2010; Prananto & McKemmish, 2007; Altameem et al., 2006).

Information Technology (IT) Standards: The lack of the cooperation between government agencies, hardware and software in different government systems will lead to the failure of e-government (Khanh, 2014; Altameem et al., 2006).Therefore, e-government initiatives should be based on IT Standards that are important requirements to improve the implementation of e-government (AL-Kaabi, 2010).

Security: One of the important issues in e-government's implementation is that e-government initiatives requires improved security procedures through implementing good authentication systems firewall devices slow level of confidence and security for government's sensitive information may lead to the failure and loss of trust in e-government (Al-Sobhi & Weerakkody, 2010; Sinjeri et al., 2010; Schwester,2011; Dada, 2006)

Flexibility: E-government's implementation needs a good flexible infrastructure to accommodate different systems for users, partners, suppliers, and other government organizations, as well as accommodating future user's requirements (Gebauer & Lee, 2008; Goings et al., 2003). In addition, the use of advanced software will accelerate the process of e-government implementation (Al-Azri et al., 2010; Wilson et al., 2002).

Quality: Improvement of public service quality and the way in which services are delivered are of the main objectives of the e-government since quality of services in e-government can be defined through the citizen's evaluation and judgment, the value and excellence of offerings through on-line services (Lee & Levy, 2014; Al-Al-Sobhi & Weerakkody, 2010; Altameem et al.,2006).

Accessibility: The term of accessibility refers to the delivery of services to users at anytime and anywhere, easily and from different channels, data communications devices, and platforms via distant locations (Al-Sobhi & Weerakkody, 2010; Saatçioglu et al., 2009).

User-Friendly: The e-government system should be easy to use and complexity-free for users to achievement e-government goals (Bwalya, 2009; Wood-Harper et al., 2004).

2.9.3 **People Factors**

The "People Factors" are of a fundamental value in implementing e-government. People must be considered as important success factors. People factor include the following:

Trust: Trust between end users and government, and from one agency to another can be seen as one of the key factors in e-government's implementation because the trust and secure technologies influence citizens to adopt e-services (Sang & Lee, 2009). The trust in the new channels of e-services also creates success implementation of e-

government initiatives (Al-Rashidi, 2010; Al-Sobhi & Weerakkody, 2010; Gilbert et al., 2004).

Training: Training is an important element for any successful e-government initiatives that needs to be incorporated within the implementation of e-government that can improve the overall development to e-government (Sang et al., 2009; Altameem et al., 2006, Hung et al., 2006). Training is associated with encouraging citizens to accept and use e-government by helping them to use computer and internet services, as a result this will lead to the increase diffusion of e-government services into societies (from the government side) and also will affect the adoption rate of e-government (from the citizens' side) (Al-Rashidi, 2010; Al-Sobhi & Weerakkody, 2010).

User Computer Efficacy: The ability of users to use and cope with new technology such as the Internet and the skills needed by citizens to use technologies (Esteves & Joseph, 2008; Masrek et al., 2007). The citizens' skills are classified into two types: skills needed by citizens in order to obtain e-government services and information literacy. Technology skills are used to solve problems, make decision, to gather and disseminate information (Karunasena, 2012; Al-Azri et al., 2010; Lam &Lee, 2005; Goings et al., 2003; Stephens & Shotick, 2002).

Awareness: Awareness in e-government refers to the efforts of aggressively marketing the benefits of e-government services to users in the rural and urban areas (Altameem et al., 2006; Chowdhury et al., 2006; Themistocleous et al., 2005). It is

the beginning stage of implementing e-government and is one of the methods to avoid resistance and stimulate growth of e-government technologies to success (AL-Kaabi, 2010; AlAwadhi & Morris, 2009; Wood-Harper et al., 2004).

Resistance to Change: Resistance to change by older users is always a main concern. Users should understand the benefits of the new procedures needed to implement e-government (Schwester, 2009; Ebbers & van Dijk, 2007). The reasons of resistance to change include users who have fears to make use of new technology and the impact of the new technology have on their personal and work lives (Al-Rashidi, 2010; Lam, 2005).

2.10 Summary

This chapter gives a detailed description on prominent e-government's implementation models. Ten e-government implementation models are discussed Layne and Lee's Four-Stage Model (2001); Deloitte and Touche's Six-Stage Model (2001); United Nation's Five-Stage Model (2001); Gartner's Four-Stage Model (2000); Hiller & Blanger's Five-Stage Model (2001); Howard's Three-Stage Model (2001); Word Bank's Three-Stage Model (2003); Moon's Five-Stage Model (2002); Chandler and Emanuel's Four-Stage Model (2002); Pacific's Six-Stage Model (2004). The characteristics, weakness, strengths, and domain focus for each model are also presented.

The chapter also provides an overview on e-government, barriers and benefits for e-government's implementation in developing countries. It also provides an overview

of e-government’s implementation in Jordan as a research context. Finally, the explanation of three categories (organization factors, technology factors and people factors) related to the success factor for e-government's implementation in developing countries is highlighted.

CHAPTER THREE
RESEARCH METHODOLOGY

This chapter presents the research methodology that was used in order to answer the research questions and to achieve all the research objectives. It thoroughly explains the phases used to develop e-government implementation model for Jordan. These phases include: Preliminary phase, Theoretical phase, Practical phase and Development phase.

3.1 Introduction

Research methodology is the methods, techniques and strategy used by the researcher in carrying out the research and answer research questions (Saunders et al., 2011; Myers, 2013). This study has used qualitative approach to explore and do in depth study of the e-government implementation experiences in Jordan. The aim of this research is to develop an e-government implementation model for Jordan. In order to achieve this aim, the study needs to discover and extract the CSFs for e-government implementation in Jordan from the different perceptions of managers, senior managers, and decision-makers in the Jordanian ministries. Furthermore, this study will include the experiences and attitudes of respondents as well as it attempts to gain insight into the given e-government problem (Deraman et al., 2012; Creswell, 2009).

Meta-synthesis was used in this research to achieve the main contribution for this study is developing e-government implementation model for Jordan. Where Meta-

synthesis is a research method used to produce interpretive translations, ground narratives or theories by integrating and comparing the findings or metaphors of different qualitative studies (Beck, 2002; Sandelowski et al., 1997). Qualitative meta-synthesis enlarges the interpretive possibilities of data. Meta-synthesis differ from secondary analyses in that the former uses the findings of published research as data and the latter uses raw data collected by original researchers to reexamine an issue under study (Maranny, 2011). The purpose of meta-synthesis is to create an innovative and integrative interpretation of the qualitative findings that is more substantive and more important than those revealed by the individual investigations (Martin, 1995). This method is used to merge multiple studies in order to produce comprehensive and interpretive finding by comparing, interpreting, text and diagram, translating and synthesizing different research frameworks. This method has been widely used in social sciences.

The methodology of this research is qualitative and meta-analysis and synthesis consists of the following steps: Getting Started, Select Relevant Studies, Reading the Studies, Determining How the Studies Are Related, Translating the Studies into One Another, Synthesizing Translations and Expressing the Synthesis and Presenting the Finding. The previous steps were adapted to be more suitable for contacting this study. Consequently, four stages were proposed to achieve the research objectives, aiming to develop e-government implementation model for Jordan as explain in the follow sections.

3.2 Research Methodology Phases

This section explains the stages involved in this research. Meta-synthesis research method was adapted on this study. The research methodology has four phases that aim to develop e-government implementation model for Jordan as a one of developing countries. This methodology consists of four phases: 1) Preliminary phase, 2) Theoretical phase3) Practical phase and 4) Development phase, as shown in Figure 3.1. Each phase have some activities, and has certain goals to achieve during the phases, set of inputs, activities that show how to achieve the goals, and set of deliverables from each phase. Each of the phases is discussed respectively in the Section 3.3 to 3.5.

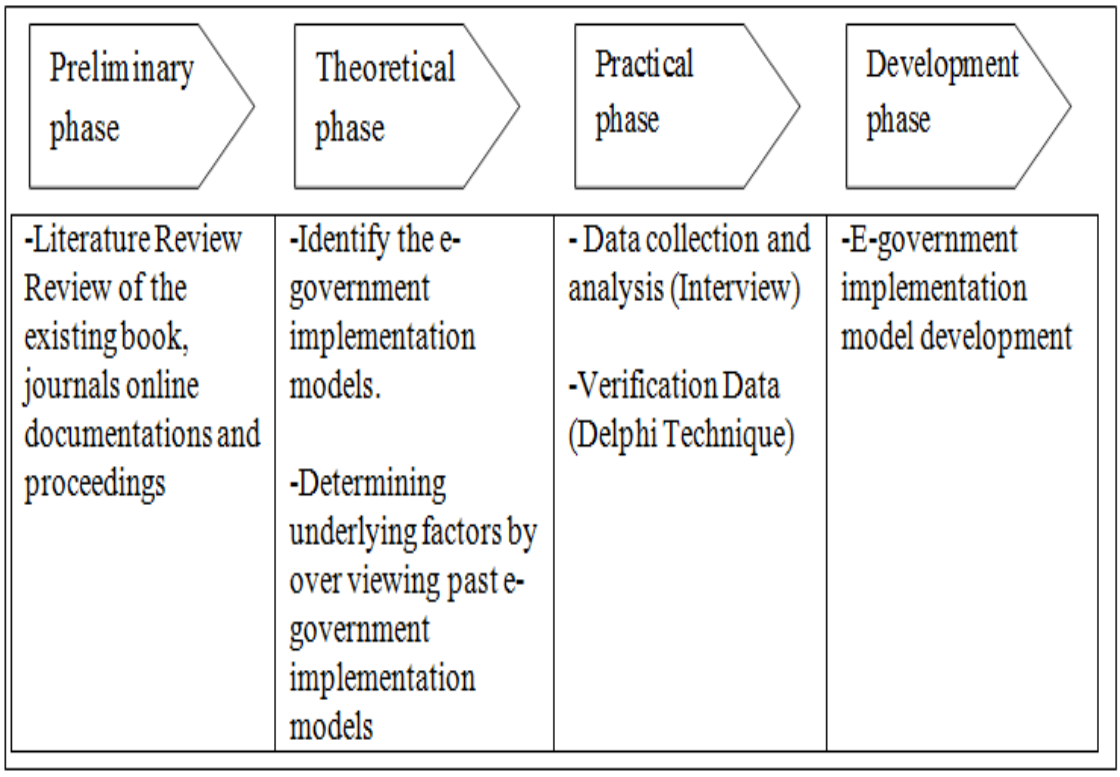


Figure 3.1. Research Process

3.3 Phases One: Preliminary Phase

The first basic stage of the research depends on the secondary resources through literature review from journals, books, documents, proceeding, and other academic research studies. The review focused on several related topics like the e-government's implementation and challenges, e-government's implementation models as well as e-government success factors.

This phase was performed by reviewing related literature and books (Task 1). In order to review the previous studies that are relevant to the subject of the study, an examination of the popular e-government implementation models as well as the challenges of e-government implementation are done.

The output from this phase was the collect all previous studies that have related to the e-government implementation in developing countries. The outputs of this phase, indeed, are inputs for the second phase in the research methodology. Figure 3.2 shows a summary of the input, activities, and output of the phase one.

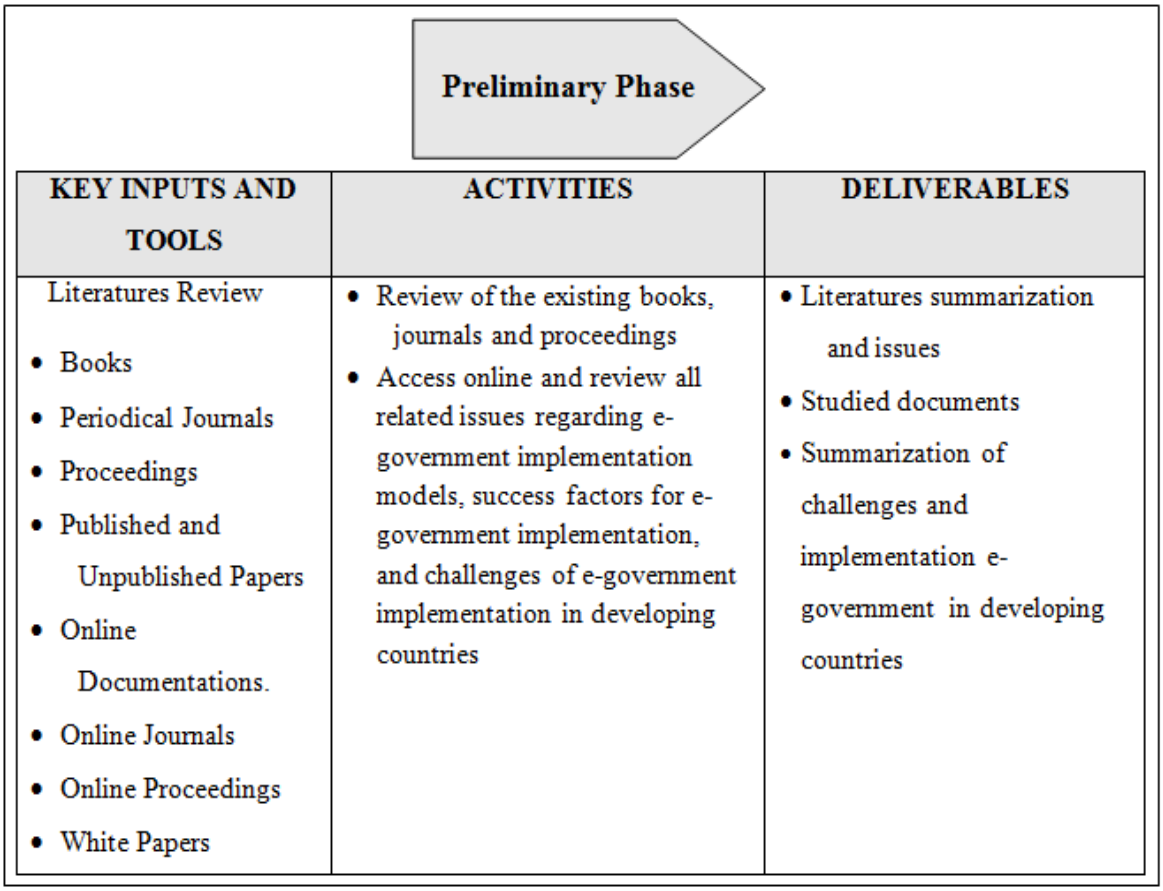


Figure 3.2. Inputs, Activities and Deliverable of Preliminary phase

3.4 Phases Two: Theoretical Phase

The aim of this phase is to investigate the current methods, challenges and problems related to e-government's implementation in developing countries and the limitation on the e-government models. This phase also aim also to identify the popular e-government models that was used for implementation e-government successfully, also that can be considered as a baseline to development the model for e-government's implementation in Jordan as a objective for this study.

This phase was conducted in three parts. Firstly, it aims to investigate the current challenges and problems related to e-government implementation especially in developing countries. Secondly, to identify the popular e-government's implementation models in developed and developing countries. Finally, collect and identify most of success factors to the general e-government's implementation.

The first part involved investigate the current challenges and problems related to e-government implementation especially in developing countries, viewing the factors for e-government implementation also review the popular e-government implementation models that was performed by reviewing related literature and books.

The second part collects the general factors of e-government implementation (Task 2). The final part efforts to identify the popular e-government implementation models, analysis of the stages, services and facilities for every model, determine the weak and strong point for every model, determine the services provided to citizens, ways to access e-government services and identify the characteristics of service delivery channels and to gather the success factors from the stages, services and facilities for the e-government implementation models (Task 3).

The output from this phase was the discovery of twenty one factors from general success factors for e-government's implementation in developing countries as well as analytical study to the popular e-government implementation models. The factors and analytical study to the models for e-government's implementation can be

considered as part of the theoretical contribution. The outputs of this phase, indeed, are inputs for the second phase in the research methodology. Figure 3.3 shows a summary of the input, activities, and output of the phase two.

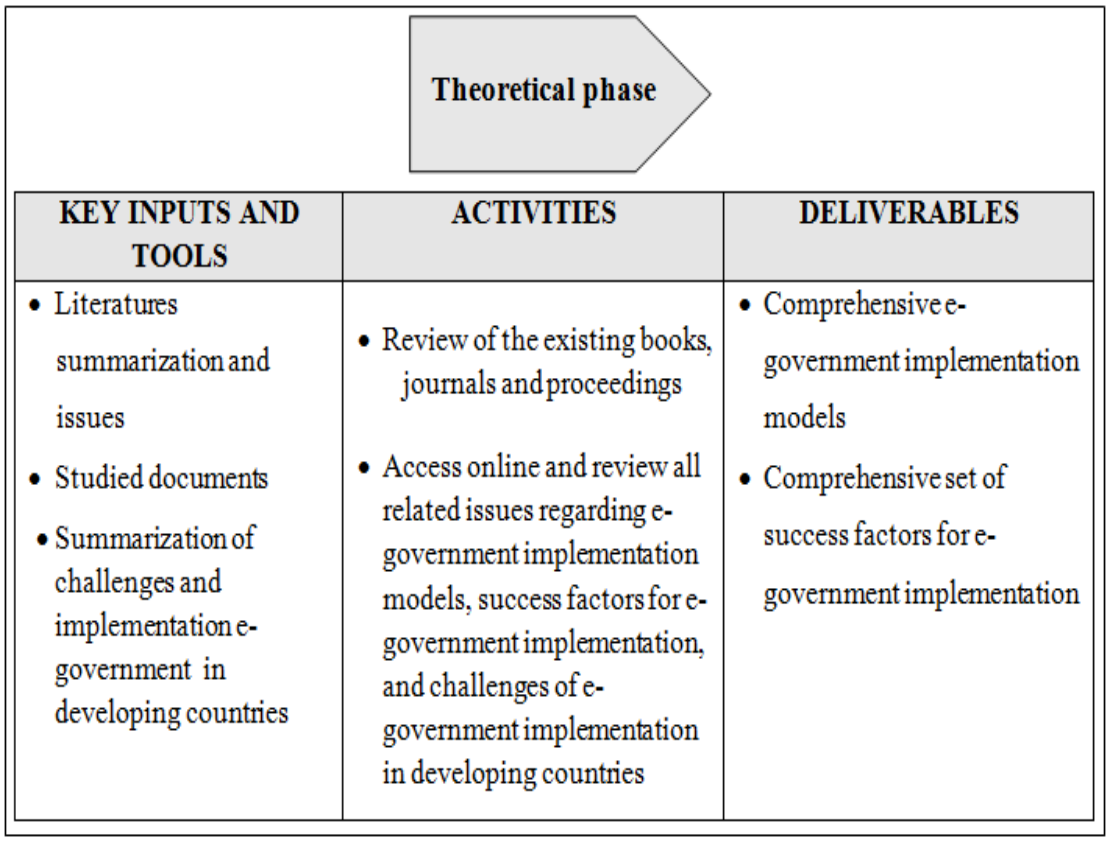


Figure 3.3. Inputs, Activities and Deliverable of Theoretical Phase

3.5 Phase Three: Practical Phase

The third essential phase of the research is the Practical phase. This stage is based on the output of the second phase (Theoretical phase) as an input to discover the success factors for e-government's implementation in Jordan as an example of developing countries, and to investigate the CSFs for a-government's implementation from the

experience and perspectives of the managers, senior managers and decision-makers.

Figure 3.4 describes the inputs, process and the outputs of Practical phase.

Practical phase

KEY INPUTS AND TOOLS	ACTIVITIES	DELIVERABLES
• Comprehensive e-government implementation models • Comprehensive set of success factors for e-government implementation	• **Preparation process** - Prepare pilot interview question. - Conduct interviews with pilot respondents and confirm validity of the question. - Analysis of pilot data. - Modify pilot questionnaire based on comments from respondents. - Produce report of pilot survey. • **Execution Process** - Modifying the interview question if required. - Define and determine the respondents. - Conduct the interview. • **Analysis Process** - Collecting the data. - Analysis the data. - Analysis the results. • **Verification Process** - Select experts - Select the initial Critical Success Factors for e-government implementation - Reference of Critical Success Factors (CSFs)	• Critical Success Factors for e-government implementation in Jordan from managers and decision-makers point of view

Figure 3.4. Inputs, Activities and Deliverable of Practical Phase

During the phase, there main activities were conducted. The main activities involved four main processes: preparation process, execution process, analysis process and verification process. The first main activity in this phase is preparation process, where the activity includes the design and construct of interview questions, conducting pilot test for interview questions, modification and analysis of pilot interview questionnaire as well as analysis of comments from respondents. The second main activity in this phase is execution process, where these activities include the selection of the respondents from three Jordanian ministries (MoICT, Ministry of Education and Ministry of Labour) as well as the interview of the respondents. The third main activity in this phase is analysis process, where these activities include the collection of data from the respondents through interviews and data analysis. The last main activity in this phase is verification the CSFs, where these activities include the verification from CSFs through using the expert-review approach.

3.5.1 **Preparation Process**

This part was done by reviewing past works on the list of questions asked in the test interview sheet. Based on the information gathered, the research proceeds with the design of the interview questions and the testing of it via a pilot interview. The interview questions were constructed based on the research problems and requirements as well as the information from the model for e-government's implementation. The amount of time needed to answer the interview questions were calculated and measured. The interview questions consist of four parts: (1) the respondents' demographic, (2) the E-government in Jordan Ministries, (3) the

challenge, problems, and benefit of e-government's implementation in Jordan, and (4) the factors (Appendix: A).

The aim of the pilot study is: a) to improve the interview questions, b) to determine the applicability of interview items in the specific research context and c) to test respondents' comprehension and clarity before the actual interviews were administered. Additionally, in order to ensure that no important attributes or items were omitted, some changes were made in the questions design, a few new items were added and some items were omitted according to the opinions of experts.

The pilot study was conducted involving three managers and decision-makers from same three Jordan ministries between 15-1-2012 to 25-1-201. Each interview was scheduled in each ministry for 45 minute, but each interview actually took an average of 30 minutes. Each participant was asked to review the item list, and give their opinions. All three participants were experienced employees of e-government who were also familiar with the e-government's implementation in Jordan ministries. Three participants who participated in this process had direct and indirect experience with the e-government, governmental departments, or online services offered from three different ministries in Jordan. They had to evaluate the interview questions and give the preliminary feedback on the questionnaire.

One of them who had 8 years of experience in e-government infrastructure worked as a developer for network and infrastructure to deliver e-government services in the MoICT. The other one, with 4 years of experience in the management of e-

government worked in e-government management, policy development and legislation to assist in the implementation of e-government and the delivery of e-government services to citizens in the Ministry of Labour. The third person has 3 years of experience in e-government projects and worked as implementer (programmers) of e-government sites to deliver government information through websites as well as to assist in the implementation of e-government and e-government services for students and citizens in the Ministry of Education.

After testing the interview questions in the pilot interview, all comments were taken into account and changes were made to the interview questions, the language, clarity of the questions and length. The interview questions were sent back to the same participants the pilot study, to thoroughly review every question. Upon approval, these questions were further update to be used in the next data collection stage. Then the actual interviews were conducted in order to obtain inputs from various domains, identifying the initial CSFs that effect on e-government implementation in Jordan.

3.5.2 **Execution Process**

A research method is a strategy used to answer the research questions (Myers, 2013; Thornhill et al., 2007). Qualitative Research methods are used widely in Information Systems (IS) that include: Action research, Ethnographic research, Grounded theory; and Case study research (Myers & Avison, 2002; Carroll & Swatman, 2000). In this study, a number of research methods were considered to find possible alternatives to answer the research questions. Creswell (2013) explains that researcher can determine the designs of different assumptions, and skills and research methods.

According to Creswell (2013), there are popular approaches: Grounded Theory, Narrative Research, Ethnography, Case Studies and Phenomenology. Different design of qualitative approaches is aimed at developing different types of knowledge (Bergold & Thomas, 2012; Morse et al., 2002).

3.5.2.1 **Phenomenological study**

This study is phenomenological in nature. The phenomenological study describes the connotation for some individuals of their lived experiences of a concept or a phenomenon (Creswell, 2013; Lester, 1999). Phenomenology study mainly focuses on describing experiences of a concept or phenomena (Creswell, 2009). The general idea of this approach basically relies on identifying the command experiences faced by respondents during certain phenomena such as having insomnia, being left out, anger, grief, or undergoing surgery (Groenewald, 2004). This kind of research begins with identification of respondents and phenomena that the researchers intended to study (Englander, 2012). Having such brief idea, the researchers start to collect data from persons who experienced the phenomenon and develop a composite description of the experience for large number of cohorts (Mayoh & Onwuegbuzie, 2013). In this study, research questions must be descriptive and must look for meaning in the experiences such as what kinds of experiences are being faced by the persons and how they went through this incident play a crucial role in determining and interpretation the experiences lived (Creswell, 2013). A phenomenological study approach was selected for the data collection in this study.

Creswell (2013) describes the Phenomenological study being a common mean for several individuals or points of views of their experiences of a concept or a phenomenon. Phenomenology literally means the study of phenomena. It is a way to describe something that exists as part of the world in which we live such as events, attitudes and experiences or concepts. We are surrounded by many of the phenomena that we are aware of. However, we cannot fully understand, and our lack of understandings of these phenomena may exist because the phenomenon is not clearly described, explained or understood (McCaslin & Scott, 2003; Creswell, 1998).

The phenomenological research is mostly trying to understand the experimental issues from the perspectives of those being studied. This type of study clarifies the meaning of lived experiences of several individuals about a concept or phenomenon. It is about getting data from several people who have been exposed to this phenomenon (Creswell, 2013). Data collection in phenomenology research is gathered from persons who have experienced with the phenomenon (Lowther, 2012; Denscombe, 2010).It helps to develop a composite description of the spirit of the experience for all of the individuals.

Phenomenological study is popular in the many subjects and disciplines (Tesch, 2013; Nieswiadomy, 1993; Borgatta & Borgatta, 1992; Swingewood, 1991; van Manen, 1990; Polkinghorne, 1989) and it also takes in many forms (Morse, 2013). Kanaan (2009) in his study used phenomenological study with e-government by describing the challenges, benefits and perspectives of implementation of e-government services through the lived experiences to the participants and managers.

Often the data are collected in phenomena studies through in-depth interviews or multiple interviews with participants (Creswell, 2006). In addition, the researchers in phenomenological study can be allowed to conduct multiple interviews with each participant (Roulston, 2013; Roulston, 2010). Grounded theory is not suitable with the current study because this study depends on deductive type of data. While ground theory depends on the inductive data, and it may not have the flexibility desired by some qualitative researchers (Creswell, 2013).

On other hand, the ethnographic study is unfavorable in this research as it involves observations compared to the phenomenological research study that emphasizes “the essence of experiences” (Creswell, 2013, Page: 122). Ethnographic study also focuses on an entire culture-sharing group and aims "to understand the study of groups” (Creswell, 2013, Page: 91). Creswell (2013) states that the danger of this method is when there is a possibility of the researchers will ‘go native’ and unable to complete or be exposed to encounter risks in the study.

This current study focuses on the individual interviews and participants’ perspectives. Additionally, the narrative research is focus on exploring the life experiences of typically one individual (Creswell, 2007). In this study, one research participant would not have been adequate in determining the critical success factors that affect on e-government’s implementation in Jordan. Specifically, each manager in the government ministries has a different perception or determines factors that affect the process of successful implementation, and therefore, it is important to interview more than one research participants.

Finally, the phenomenological approach is developing an in-depth description and analysis through the study of an event or program. It is an activity usually one within certain limits, within a specific environment or sometimes more than one person within specific environment (Creswell, 2007). This study focuses on managers' expertise (participant's perspectives) more so than an event or evaluation of a programme.

Creswell described the focus of the phenomenological approach as understanding the essence of an experience and having to describe the essence of a lived phenomenon (Creswell, 2007). Maxwell (2012) recommends researchers' decision to consider carefully the factors that should be included in the search, and the factors that must be taken into account. The conceptual scope for this research was already presented in Chapter Two. The phenomenological approach was considered the most appropriate method for this research study. It is carried out to understand Jordan's e-government's strategies, and to investigate the CSFs related to e-government's implementation in the Jordan ministries.

3.5.2.2 **Data Collection Methods**

The goal of this research is develop model for e-government implementation in Jordan, develop the e-government implementation model depends on identifying CSFs that influencing on the success of e-government's policy development and implementation for developing countries like Jordan. As a qualitative approach has been accepted for this research, it is expected to elucidate numerous stories of managing and implementing the e-government's initiatives in Jordan. According to

Rockart (1978) CSFs collected from managers, senior managers and decision-makers that have experience in the field of study. The researcher keeps field notes with the interviews of members of different managers, senior managers and decision-makers in the Jordanian ministries and serves as an analyst who can report those factors that lead to the success of e-government's implementation.

In order to extract CSFs for e-government's implementation in Jordan, this study intends to collect enough data to achieve the objectives of this research. It is hoped to give readers a complete picture of the phenomenon under study. It must be recognized that this set of data is going to be carried out according to the phenomenological method. Interviewing is the best way to capture the required data. An Interview is one of the most important sources of data collection methods of qualitative research, and should be able to provide to the researcher, the rich and deep data, with a direct focus on the subject being studied. It allows the researchers to explore complex themes and experiences in greater depth (Rubin & Rubin, 2012).

3.5.2.3 **Interview Technique**

An informal and semi-structured interview style was selected for the phenomenological method to collect data for this research. This approach is flexible because it allows the researchers to raise new questions during and throughout the interviews (Yin, 2009; Baxter & Jack, 2008). The interviewers can organize a set of questions in advance, leading the interview in a conversational and open manner (Brinkmann & Kvale, 2008).On the other hand, the interviewers can make the interviewees talking frankly and generously, ensuring that the interviewer obtains in-

depth information on the subjects discussed. Bernard (2011) states that, the benefits of semi-structured interviews are that the researcher has the control over the process of obtaining information from the interviewees and is able to pursue new clues that arise during the interview process.

The style of the interviews matched with the participants 'experience which allowed them to express their views at length and under no pressure. The researcher had used this technique as the primary method for data collecting from some of the Jordanian public managers, senior managers and decision-makers from three different Jordanian ministries. This was undertaken to facilitate the communication of directors' experiences about the Jordanian e-government initiatives. Open-ended questions were used in order to capture the meanings of the participants' experience most accurately or how they deal with their jobs and how they describe or "make sense" of significant circumstances or situations outlined in their experience (McMillan & Schumacher, 1993). Furthermore, the face-to-face interviewing technique was selected because it is the best medium for allowing a range of forms of expressions such as body language or tone of voice, and for facilitating immediate reactions, thereby enhancing the interpretations (Daft & Lengel, 1986).

During the interview process, an audio tape recorder was used to record conversational data. The interview data were also collected via written notes (field notes) made by the researcher with the permission and informed consent of each respondents. Records were made during the interviews, consisting of arrange of individuals' responsibilities in their organization, their experiences in the field of e-

government and the strategies used in e-government initiatives. During the interviews, the researcher has admitted his own bias, and tried to maintain an open mind in the face of unexpected information emerging during the interviews. The manner of interviewing may vary with each interview and may generate different responses.

Alterio and McDrury (2013) indicate that the researcher uses a 'reflection-on-experience' style which implies that the interviewer reconsiders the administrative experiences, building connections with his previous experience and develops an appropriate strategy to deal with similar situations in the future in order to determine more accurate answers to the research questions.

Before each interview was conducted, the respondents were contacted by the researcher with an official letter (Appendix: E), asking for their voluntary participation in the research, together with approval forms to the respondents. In this study, the respondents were asked to obtain permission from their ministries to be involved in this research. The research has to make appointments to meet with each respondent in their ministries respectively. The interview served as the primary means of data collection to study the government‘s efforts from the points of views of e-government’s implementation.

For this research, the interviews and oral responses were audio-taped individually. The phenomenological approach was used in this research. According to the Creswell (2012, page: 149) thirty interview were conducted through field visits to

the three ministries in Jordan between 5-2-2012 to 30-3- 2012, ten interviews for each ministry. Each interview was scheduled in each ministry approximately 1 hour in length, but in reality, the average time for each interview took approximately from forty-five to fifty minutes. The entire ministries' representatives brought up the issue involving Managers, senior managers and decision-makers interested in e-government and the interviews were recorded with the participants' permission.

The major goal of the interview was to determine the initial CSFs that have the effect on the success of e-government's implementation in Jordan. In order to know the current situation for e-government's implementation, it is necessary to identify the problems, challenges and opportunities facing the e-government's implementation in Jordan. Moreover, data were classified into a few categories to examine the types of success factors.

3.5.2.4 **Interview Translation**

The interview questions were translated into Arabic language using a back translation technique in order to achieve the measurement equivalences in both languages (Brislin, 1970). Interviews were sent to a language centre with two bilingual experts (Arabic / English), so as to ensure that the two versions harmonized as close as possible. The Arabic version was translated later back into English by another expert bilingual in order to remove or resolve any differences (Appendix: F).

3.5.2.5 **Respondents Background**

The research interviews were conducted from February 2012 to March 2012. A total of 30 individuals were selected for the personal semi-structured interview of this research. The sample included individuals who able to be helpful, because they were experts in their positions or was privileged to witness a reform event during their years at the job. Choice of interview subjects, according to Maxwell (2012) was the result of "purposeful sampling" where the researcher would select private environments, person or event deliberately in order to useful and relevant information, which cannot be supplied from other options.

The participants are managers, senior managers and decision-makers in three ministries in Jordan. Although prior to the interview sessions, there were forty five respondents from three government ministries who agreed to be interviewed, but fifteen of them did not want to participate in this research. Therefore, only 30 participants took part in this study. Each ministry had shared ten interviews from all the interviewers, and interviews were conducted after setting a date in advance with the participant.

Each interview was conducted between an hours' to forty five minutes. Table 4.1 provides some information on the background of the participants in this study. Full details of the participants are in Appendix: H.

Table 3.1
Study the Respondents' Background Information

Respondent	Ministry	Position	Working Experience	Experience in e-government
Resp (1)	Education	Head of Network Division	Computer Maintenance Technician 9 years, Network Engineer 10 years	8 years
Resp (2)	Education	Head of E-Government Unit	20 years in the Information Technology and Technical Education	4 years
Resp (3)	ICT	Webmaster	12 years in Amman.Net Company, Employ in Royal Academic for Technology, webmaster	8 years
Resp (4)	Education	Head of Services and Web Development	Lecture in Alia prince collage Programmer in Education Ministry. Member in the e-learning. Head of Department at the Ministry	5 years
Resp (5)	ICT	Head of Information Technology	5 years in Saudi Arabia "designing programs", 3 years in private engineering company, 6 years in the Jordan E-government	6 years
Resp (6)	ICT	Head of Technical Support	8 years in Information & Communication Technology. 4 years in Jordan Post	8 years
Resp (7)	ICT	Director of IT in E-government Initiative	5 years in private sector. 2 years in government sectors (Ministry of Healthy). 9 years in MoIC	9 years
Resp (8)	ICT	Head of Support Extension & the Relation between the Ministries	4 years in private sector, 13 years in the MoICT	13 years

Resp (9)	Education	Managing Director of Queen Rania Al-Abduallah Center for Education and IT	Managing Director of Queen Rania Al-Abduallah Center for Education and Information Technology. Head of Computer and e-learning in the Ministry of Education, Lecturer at Jordan universities.	10 years
Resp (10)	Labour	Head of E-government Unit	Since 1999 -2000: Programmer in a private company, Since 2000 – 2012 Director Departments of Valuable Programming and Systems Analysis. Ministry of Labour; in charge of in e-government applications	12 years
Resp (11)	Labour	Director of Employees	For 10 years in the OECD national. 16-year follow-up in personnel affairs.	16 years
Resp (12)	Minister of Labour	Doctor Lecture in university & chairman of the development of infrastructure of E-government	Professor. Officer and Head of Department in the Ministry of Labour. Member of Jordanian House of Representatives Minister of Labour	2 years
Resp (13)	Labour	Head of Technical Support& online service	Employed in Batelco Jordan. Officer and Head of Department at the Ministry of Labour	4 years
Resp (14)	Labour	Head of Technical Support	8 years in the Ministry of Labour. 5 years in the General Statistics. 4 years in the offices of Marketing	6 years
Resp (15)	Labour	Director, Division of Monitoring and Technical Support	Head of Department at the Ministry of Labour. Director of Internet Café. Director of IT in a private company	8 years

Resp (16)	Education	Head of Programming	Two years' experience in teaching Computer programmer in a private company for a year. Head of Programming at the Ministry of Education	12 years
Resp (17)	Education	Director of Studies & Technology Projects	30 years in E-learning	18 years
Resp (18)	Education	Manager Directorate of Education Resources	International Trainer for Employment Process Technology at the administrative and educational level. Lecturer at the university. Teacher in public schools	10 years
Resp (19)	Education	Head of E-learning Division Educate Administrator	Hierarchy in different functions in the Ministry of Education. Head of e-learning system	10 years
Resp (20)	Education	Advisor of Ministry for Information Technology	Educational Supervisor. Director of E-learning, author of books and a teacher. Expert design E-learning	12 years
Resp (21)	ICT	E-Government\ Director E-Government Program	Network Engineer at the University of Mutah. Director of Maintenance at the University of Mutah. 6 years in the Gulf Mir IT in the Ministry of the Interior. Adviser in the National Information Technology Center. Director of e-government program	4 years
Resp (22)	ICT	Head of Change Management Stream	Two years in a private company. 5 years in the MOIC	5 years
Resp (23)	ICT	Head of Tenders and purchases	17 years in the field of engineering at different sections of the MOICT, and other private companies	5 years

Resp (24)	Labour	Head of Tenders and Purchases	Work in the Ministry of Labour since 1989.	16 years
Resp (25)	Labour	Head of Media Department	19 years in the media and public relations	6 years
Resp (26)	Labour	Minister of Industry and Trade. Deputy Prime Minister. Manager in the Labour Ministry	Former of Industry previous. Former of Labour previous. Director of the Department in the Former of Labour. Deputy Prime Former previous/ House of Representatives	20 years
Resp (27)	Labour	Director, Division of Monitoring and Technical Support	Head of Department at the Ministry of Labour. Director of Internet Café. Director of IT in a private company	8 years
Resp (28)	Labour	Head of Tenders and purchases for infrastructure & E-government	One year in the Ministry of Health. 5 years in the Ministry of Labour	5 years
Resp (29)	Labour,	Director of the Department in the Ministry of Labour	Member of the House of Representatives. Lecturer at the University of Al-Hussein Bin Talal. Director of the Tourist Office. Director of Public Relations at the Ministry of Labour	2 years
Resp (30)	Ministry of ICT	Head of Development and the establishment of e-government programs	Deputy Secretary General of the Greater Amman Municipality. Member of the Jordan refinery. Director of project development in E-government. Director of the Office in the Ministry of Labour	15 years

The goal of interviewing the participants were to get the views and different perspectives about the reality of e-government implementation in Jordan and identify

implementation related as well as to list the most important factors that have a direct impact on the success of e-government.

3.5.3 **Analysis Process**

The raw data collected from the interviews were converted into useful information that might help answering the research questions. According to Yin (2009), data analysis includes examining; indexing and tabulating the collected data. In this research Nvivo software was used. In addition, 'free mapping' can also be used for qualitative studies, but it is difficult for the researcher to manage and analyze data when the amount of qualitative data reaches a certain level. Therefore, the data analysis method chosen for this study has to be able to deal with a large amount of qualitative data, and also able to satisfy the constructive, interpretive research underpinnings the study that its circumstances may be different from the other studies conducted in the same area.

3.5.4 **Verification Process**

Verification Process is the final stage in the Practical phase. This Process aimed to Verification the CSFs for e-government's implementation in Jordan. After the selection of initial CSF from Nvivo analysis, the factors will be verified by the experts in e-government field.

The verification process is used to determine the most important CSFs for e-government's implementation in Jordan. This was performed using the expert-review approach, which is cheaper, easier, and faster. Nine experts were selected from three

Jordanian ministries determine and verification the CSFs (MOICT, Ministry of Labour and Ministry of Education), before each interview was conducted, the respondents were contacted by the researcher with an official letter (Appendix: I). This study was conducted between 7-7-2013 to 5-9-2013. The approach was conducted through the following steps:

1. Identifying the potential experts related to the e-government.

2. Rogers and Lopez (2002) as well as Hallowell and Gambatese (2009) suggest that the experts should possess these characteristics: a) are within the field of the study under examination; b) hold an advanced degree (PhD);c) faculty members at an accredited university; d) authorship, and e) have at least 5 years of experience.

3. Determining the technique or method for conducting the expert-review approach. Delphi technique can be used between the expert reviews as the best technique to reach a consensus among the experts panel (Moody, 2005).

4. Design interview questions and determine the kinds of questions to be used and view all the factors of success in order to identify CSFs within the vision and experience of the participants. Details of these factors are included in Section 4.3 to 4.5 (Page: 144).

5. Collecting and analyzing feedback.

6. The feedback from the experts were collected and analyzed to determine the most critical success factors for e-government's implementation in Jordan. More details are in Section 4.8 (Page: 203).

3.5.4.1 **The Delphi Process**

The Delphi technique originally developed in the early 1950s at the RAND Corporation and it was developed by Dalkey and Helmer (1963), to become widely accepted method to achieve convergence of perspectives regarding knowledge request from experts within certain domains. The Delphi technique was originally conceived as a way to attain the opinion of experts without necessarily bringing them together face to face.

The Delphi technique (subsequently referred to as the Delphi) was defined as:

> *"is in essence a series of sequential questionnaires or 'rounds', interspersed by controlled feedback, that seek to gain the most reliable consensus of opinion of a group of experts"* (Linstone & Turoff, 1975).

This technique has and will continue to be an important data collection methodology with a wide variety of applications and uses for people who want to gather information from those who are immersed and imbedded in the topic of interest and can provide real-time and real-world knowledge. Furthermore, Delphi technique provides more opportunities to researchers than survey research, where the components of the Delphi technique include the communication process, a group of experts, and feedback (Stitt-Gohdes & Crews, 2005). Theoretically, the Delphi process can be continuously iterated to achieve the main goal of verification. Three

iterations are often sufficient to collect the needed information and to reach a consensus in most cases (Ludwig, 1997). Nevertheless, Walker and Selfe (1996) argue that most studies use two to three rounds.

In this research, Delphi technique was used as the main technique to arrange the experts review method through three rounds to determine and verify the critical factors that lead to success of implement e-government in Jordan, where the first round was aimed to determine the amount of the importance of each factor in the successful implementation of e-government.

Next, the second round was aimed to verify the CSFs for e-government implementation based on the answers and suggestions from the experts' members that were made in the first round.

Finally, the third round aimed to present the final list of CSFs for e-government implementation in Jordan that was verified by the experts that had been interviewed in second round. In this round the final list for CSFs has been displayed for the experts to make sure that all the suitable suggestions had been taken into account in the verification and also to check if there is need for further suggestions. Section 4.8 (Page: 203) discusses the results of the verification rounds and the final list of CSFs.

3.6 Phases Four: Development phase

The final stage of the research is the Development phase. The aim of this phase is to achieve the objective of this research is to develop model for e-government

implementation in Jordan as a one from developing countries. Figure 3.5 describes the inputs, process and the outputs of Development phase.

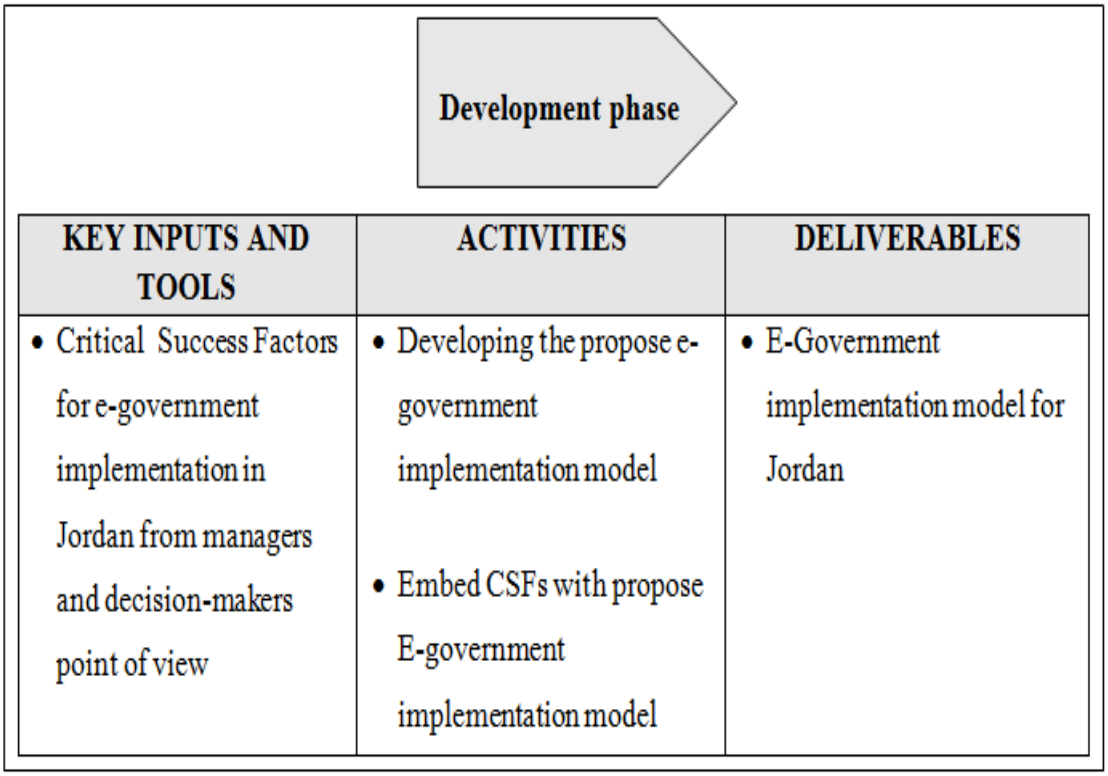


Figure 3.5. Inputs, Activities and Deliverable of Development phase

This phase was performed through two parts. The first part identifies and analysis the popular e-government implementation models to develop new e-government implementation model for Jordan. The second part, embed the CSFs the output of third phase (Practical phase) with the propose e-government implementation model.

The output from this phase was the development e-government implementation model for Jordan. The develop e-government implementation model the objective of this study and also the main research contribution.

3.7 Summary

This chapter has presented the research method used at several stages of the research. Deductive approach was used as a research methodology, described in four stages for constructing methodology for develop e-government implementation model for Jordan. The four phases involved were: Preliminary phase, Theoretical phase, Practical phase and Development phase. Each phase its own the key inputs, activities, and deliverables to achieve the research goals.

The next chapter presents the detailed data analysis procedures that have been followed in order to achieve the research aim. Nvivo software was used in this study for analysis qualitative data to determine and verify the CSFs.

CHAPTER FOUR
FINDING & DEVELOP E-GOVERNMENT IMPLEMENTATION MODEL

4.1 Introduction

The purpose of this chapter is to present the whole research results based on the data collected in Jordan. This study highlights on the results of the following research stages: Preliminary phase, Theoretical phase, Practical phase and Development phase (refer to Figure 3.1. P: 64). Each stage from this research includes several activities, where each phase has its inputs and outputs, where the outputs of each phase are the inputs for the next phase. This study will list to identify the CSFs for e-government's implementation in Jordan. The findings from this study were used to development model that lead to successful implementation of e-government's initiatives in Jordan. The discussion in this section starts with the data analysis, in order to determine the CSFs for e-government's implementation in Jordan by using qualitative approach with the aid of qualitative software Nvivo, validation of CSF by using expert review. Finally, develop an e-government implementation model for Jordan and the summary of the chapter is discussed.

4.2 Data Analysis

In this section, the results and the outcomes of this research are presented. The section presents the discussions of the findings gathered from the interviews and are discussed in four parts. The first part highlights the ways and the means of analyzing the interviews. The second part discusses the significance of the success factors that

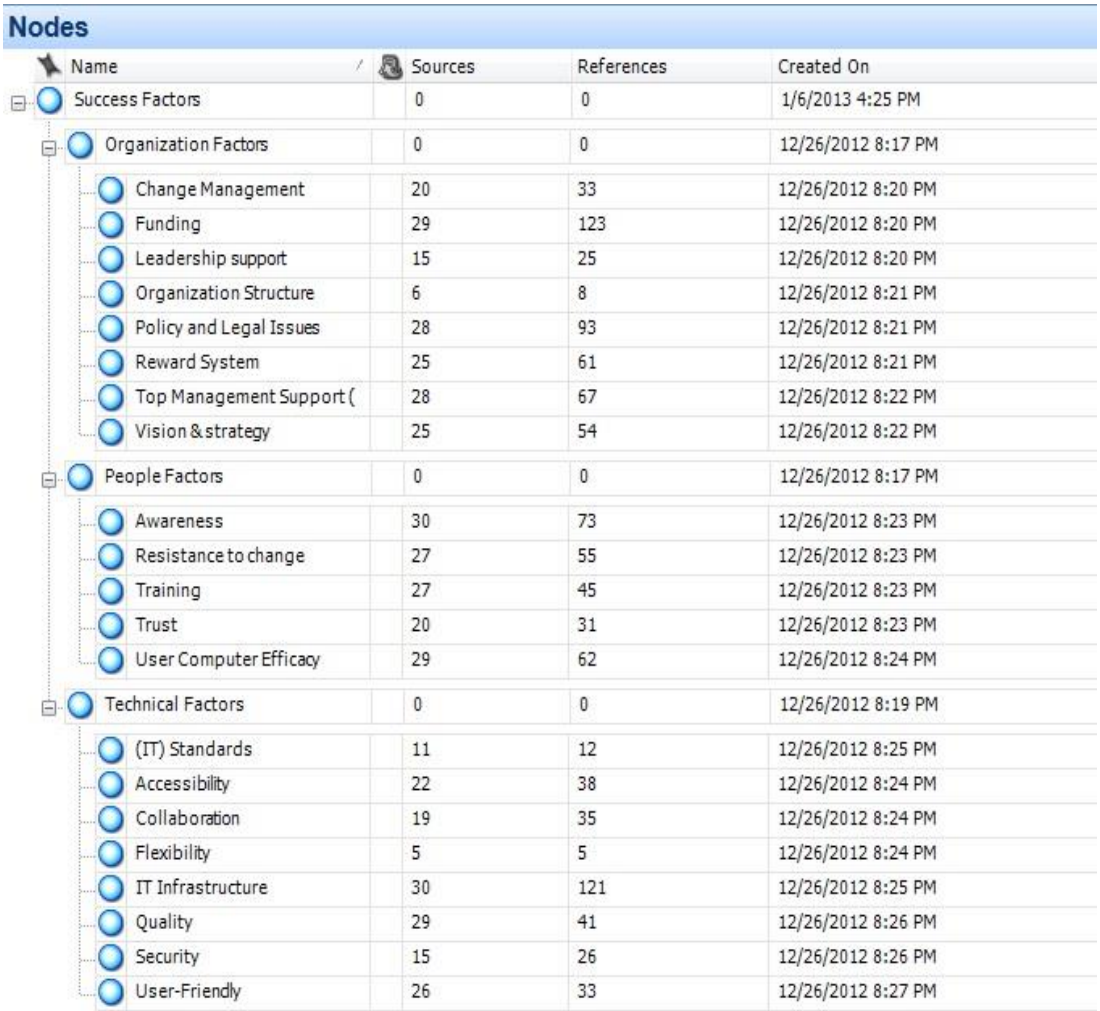
are based on the extensive literature review and their impacts on success e-government implementation in Jordan. The third part is verification the CSFs for e-government implementation in Jordan; the final part is developing model for e-government implementation in Jordan.

In this study, interviews were conducted to illustrate the challenges facing the implementation of e-government, as well as to identify practical ways to successfully implement e-government in Jordan. The interviews were specifically engaged to identify the CSFs for the successful implementation of e-government. Themes for each of these factors studied were identified through a close reading of the interviews transcribed using the analytic coding technique. This technique is considered appropriate as the purpose of this study was to explore and determine factors affecting e-government (Richards & Morse, 2012). During the review of the transcripts through the use of Nvivo, the qualitative analysis software, many themes arose from the texts were coded and categorized.

Nvivo (Version 10) has been utilized to construct and manage the data that have been collected from all the interviews. Nvivo was selected as it supports the researcher in the possibility of linking data towards theory in an efficient way (Richards & Richards, 1994; Bazeley & Richards, 2000).

Data analysis using Nvivo software, select the number of iterations and references for each sub-factors in the three main factors of the success of e-government's implementation: Organization factors, Technology factors and People factors that

were identified in the literature review emerged as the main concepts in this study (Section 2.8, p:96). These three main factors have been was generated by the Nvivo program as the main nodes where every main factor has sub-factors. Figure 4.1 show the complete Nvivo Coding Structure of the factors.



Nodes

Name	Sources	References	Created On
Success Factors	0	0	1/6/2013 4:25 PM
Organization Factors	0	0	12/26/2012 8:17 PM
Change Management	20	33	12/26/2012 8:20 PM
Funding	29	123	12/26/2012 8:20 PM
Leadership support	15	25	12/26/2012 8:20 PM
Organization Structure	6	8	12/26/2012 8:21 PM
Policy and Legal Issues	28	93	12/26/2012 8:21 PM
Reward System	25	61	12/26/2012 8:21 PM
Top Management Support (	28	67	12/26/2012 8:22 PM
Vision & strategy	25	54	12/26/2012 8:22 PM
People Factors	0	0	12/26/2012 8:17 PM
Awareness	30	73	12/26/2012 8:23 PM
Resistance to change	27	55	12/26/2012 8:23 PM
Training	27	45	12/26/2012 8:23 PM
Trust	20	31	12/26/2012 8:23 PM
User Computer Efficacy	29	62	12/26/2012 8:24 PM
Technical Factors	0	0	12/26/2012 8:19 PM
(IT) Standards	11	12	12/26/2012 8:25 PM
Accessibility	22	38	12/26/2012 8:24 PM
Collaboration	19	35	12/26/2012 8:24 PM
Flexibility	5	5	12/26/2012 8:24 PM
IT Infrastructure	30	121	12/26/2012 8:25 PM
Quality	29	41	12/26/2012 8:26 PM
Security	15	26	12/26/2012 8:26 PM
User-Friendly	26	33	12/26/2012 8:27 PM

Figure 4.1. Nvivo Coding Structure

In the previous Figure 4.1, it is noticed that the analysis of the factors depends on the frequency of each factor (references) through interviews, in addition to the number of participants (sources) who referred to each factor through their answers for

interview questions. Through the initial discussion, it can be seen that the participants in this research through their answers focused on some of the factors which they believe greatly affect the success and can help speed up the process of implementing e-government in Jordan. Figure 4.2 shows the number of times the reference of each factor by participants in this research.

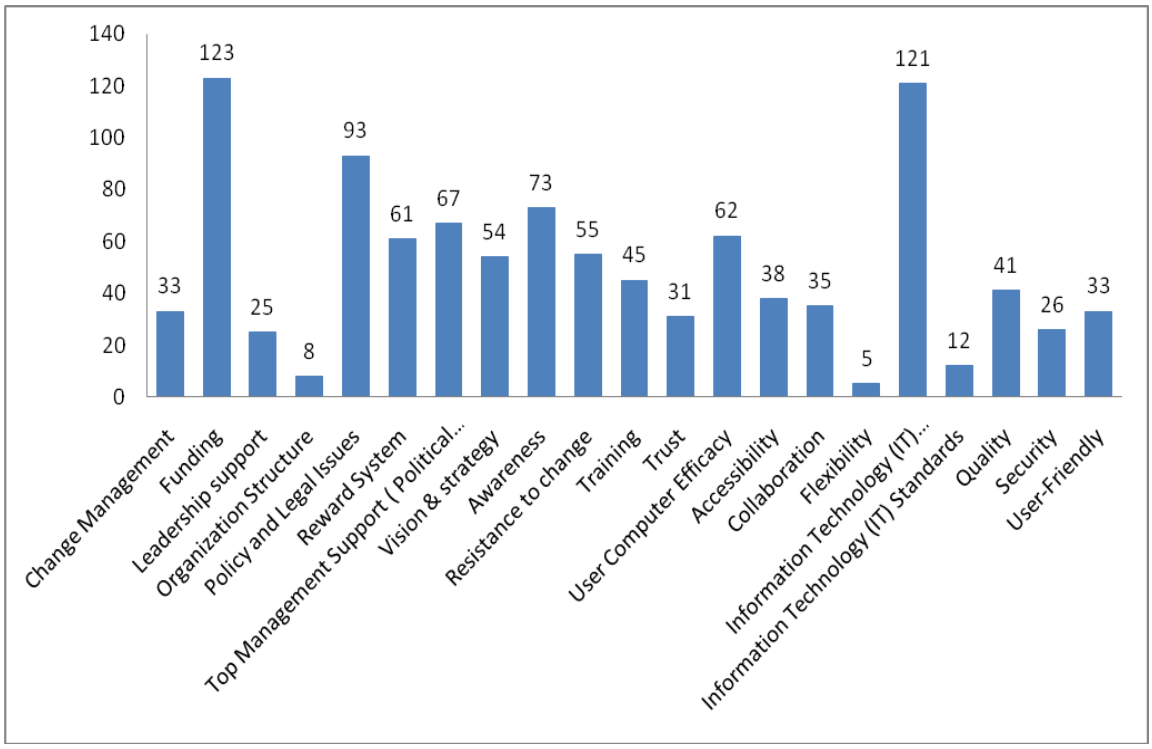


Figure 4.2. Numbers of References Reviewed by Responders on Success Factors that Influence the Implementation of E-government Initiatives in Jordan.

From the Figure 4.2, 10 factors are identified as the most important factors through the respondents' opinions in relation to e-government's implementations in Jordan. It was revealed that financial support was pointed out 123 times, IT Infrastructure 121 times, Policy and Legal Issues 93 times, Awareness 73 times, Top Management Support (Political Support) 67 times, User Computer Efficacy 62 times, Reward

System 61 times, Resistance to change 55 times, Vision & strategy 54 times and Training 54 times. Sections 4.3 to 4.5 (Page: 144) provide more details about the views of the participants in this search for success factors for e-government implementation in Jordan.

The following section discusses the findings gathered from the interviews in three parts. The section 4.3 (page: 144) discusses the Organization Factors that emerged from this study and their effects on the successful implementation of e-government initiative. The Section 4.4 (page: 164) presents a discussion of the Technical Factors, and the Section 4.5 (page: 180) discusses the People Factors that lead to success e-government initiatives.

Figure 4.3 illustrates the main success factors and sub-success factors that would lead to a successful e-government's implementation in Jordan.

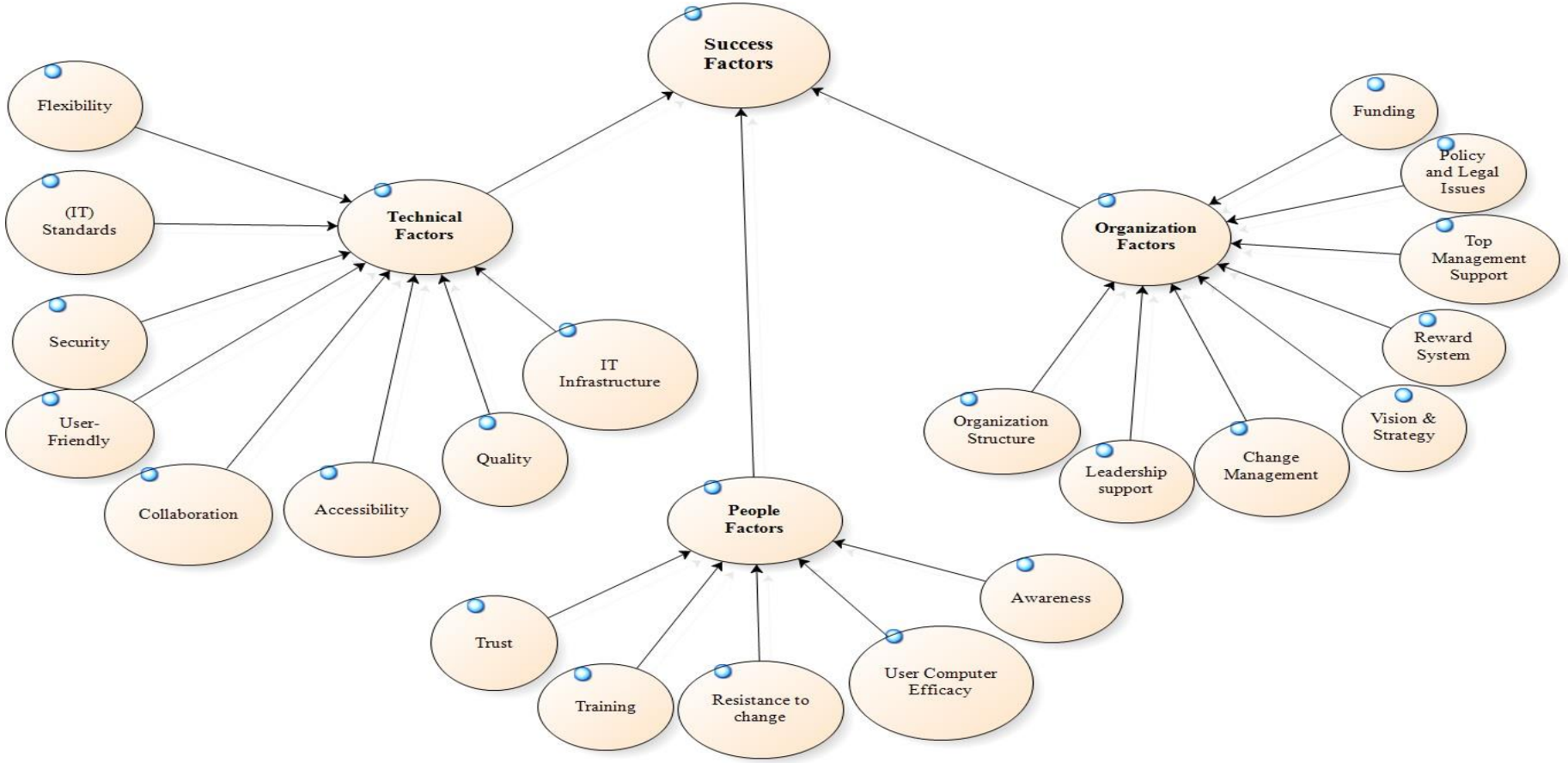


Figure 4.3. Main Success Factors and Sub-success Factors of E-government Implementation

4.3 Organizational Factors Analysis

This section provides the description of the organizational factors as identified in Chapter Two, comprising of: Funding, Policy and Legal Issues, Top Management Support, Reward System, Vision &Strategy, Change Management, Leadership Support and Organization Structure. Participants of e-government agreed on the importance of the organizational factors, describing the organization as the entity or unit through which it can be the success of the introduction of e-government's initiative in developing countries. Figure 4.4 illustrates the organizational and sub-success factors that will lead to successful e-government's implementation in Jordan.

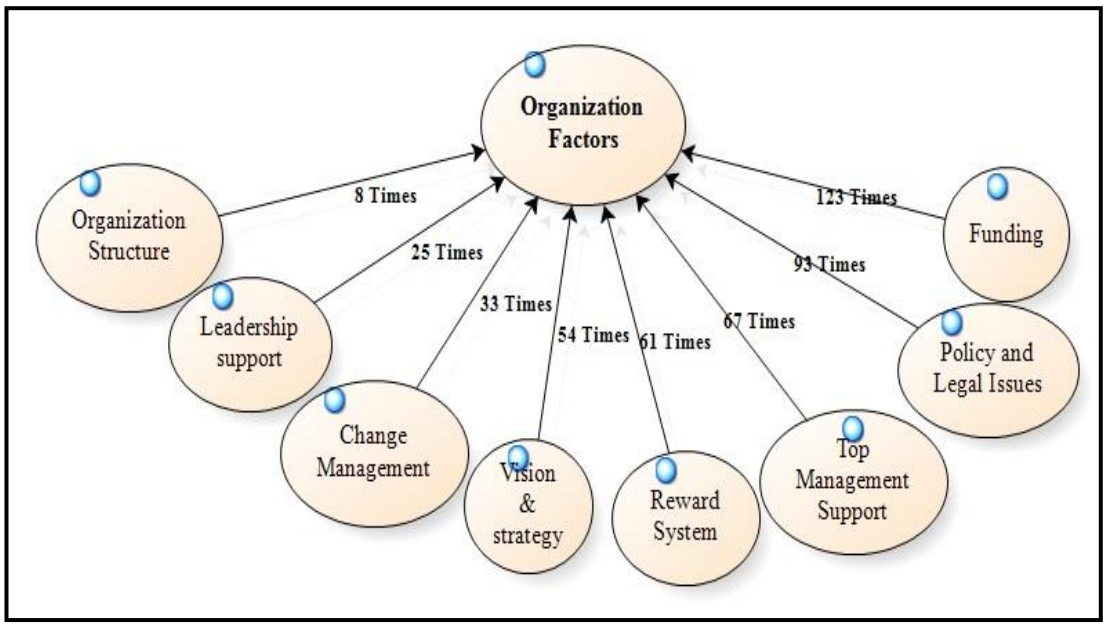


Figure 4.4. Illustrates the Organizational Factor and Sub-success Factors that will lead to Successful E-government Implementation in Jordan

4.3.1 **Financial support**

The data obtained from the interviews of managers of government ministries showed that financial support was the key factor and is considered significant to the success

of the e-government initiatives in Jordan as it could either speed up or delay the implementation e-government.

Funding was repeated 123 times by respondents and was the highest number of all other factors. Implementing e-government initiatives is a radical change and a long-term project that requires attention and continuous financial support in order to achieve success in the e-government projects.

Funding factor is one of the crucial factors in e-government's implementation in Jordan and is directly related to financial issues. It is also one of the reasons for the failure and slowness of the development and implementation of e-government. The majority of interviews believe that the financial resources available to fund their projects are insufficient, and that without financial external assistance their projects will not be fully and successfully implemented. From this research, one of the respondents explains reasons for the slow implementation of the e-government initiatives. He said that

> *"… the reasons for this slow development of e-government are the lack of financial, technical and administrative support in implementing e-government initiatives.."* Resp (2)

Another senior manager stated that:

> *"... poor financial support is also one of the problems in the Jordanian ministries whereby it has jeopardized the development and continuity of e- government projects..."* Resp (6)

The majority of the interviewees refer to the e-government project as a "major project" in their opinions. They believe that the government did not have the capacity to implement such a system because it requires a large amount of money and there is always the budget deficit in Jordan generally. A respondent explained that:

> *"... the lack of infrastructure and poor financial supplies and a shortfall in the Jordanian general budget are difficulties we are currently facing in developing e-government in Jordan ... "* Resp (17)

Besides the importance of having sufficient funding for e-government projects, some of the participants explained the needs of having more funds to address financial issues and the salaries in the public sectors due to the high cost of Internet which makes the utilization of e-government services very difficult. He said that:

> *"... poor financial support for projects and lack of government incentives and bonuses for employees are other problems we are facing as most of our talented workers tend to migrate to another place that offer better options..."* Resp (8)

Based on the decision-makers and managers in the e-government, the lack of the financial support has negative effects on e-government projects when they have the inability to complete the infrastructure projects of government networks and computers. Moreover, they also have the inability to provide support for training courses on electronic means and dealing with e-government. Furthermore, they have the inability to provide financial incentives for employees with expertise in the field of e-government that can help urge them to work. In addition, the directors of e-government mentioned that they have problems with financial issues in implementing e-government successfully provided that they have great financial support from the

leaders of this country for the transformation of e-government. In statement made by one of the respondents, he said that

> *"…lack of interest at ministries level in developing electronic services is due to lack of financial incentives for staff and insufficient financial support for e-government initiative."* Resp (21)

Many respondents have suggested some solutions for the development of e-government even if they are facing weak financial support or not having enough funds. It needs more than financial support for projects basic government infrastructure and the need to increase incentives for employees to prevent their migration to other countries and private institutions. In addition, they emphasize the need to increase the awareness about the benefits of e-government through the provision of training courses for employees and citizens. One of the managers' responses stated that:

> *"…the best ways that can be taken to increase the effectiveness of e-government application is by providing strong financial support in order to ensure the government projects could be completed on time."* Resp (6)

Another respondent cited that:

> *"...the best ways that can be taken to increase the effectiveness of e-government implementation, is by providing adequate financial support as well as to increase incentives and bonuses for employees who are working on e-government projects."*Resp (11)

The needs of financial support are crucial not only for the implementation of e-government but also ensure the needs of having enough funds to prevent the migration of employees who have the expertise in carrying out e-government

projects. The importance of having sufficient funding is not a privilege but a necessity.

4.3.2 **Policy and Legal Issues**

Policy and legal issues is an important factor for the success of e-government system. It is one of the top factors that affect the success of the implementation of e-government. It is vital to enact relevant laws and regulations before implementing the e-government on the ground. Having proper laws and regulations is a fundamental step for implementing the e-government's initiatives.

It is shown that most of the participants in this research state that strong laws and regulations which are in favor of e-government is one of the most important fundamentals of e-government. It is one of the main factors that affects on the Jordanians' e-government initiatives. Some respondents commented on this issue. One respondent said:

> *"….e-government fails or slow in implement in most of countries due to the lack of studies and plans of a powerful and realistic for the implementation process as the real-world implementation is not commensurate with the prepared design and plans, also the absence of strong policies and legislation for the implementation process occurs due to the ongoing changes to departments and senior leadership of e-government …"* Resp (26)

However, the failure of e-government or slow implementation of e-government projects is due to the lack of a decisive decisions and policies for the implementation of e-government. Through interviews, many of the participants stated that the political weakness of the decisions in relation to e-government is due to weaknesses

in the political administration. This weakness worsens in the lack of stability in the upper departments who do not make the right decision in the long-term, including the implementation of e-government. The change in the decision-makers, accompanied by a change in the critical decisions for the implementation of e-government will also affect the change in the approach and style of the implementation of e-government.

One of the respondents stated that:

> *"…the major problems which are facing the Ministry of Labor in the process of e-government's implementation are the lack of policies and poor critical decisions of senior managers/decision-makers as we as the continuous changes at the senior management position, and inconsistency of policies and plans. In addition, the absence of interest and insufficient knowledge of decision makers/staff also hinder the benefits and methods of administration of e-government."* Resp (27)

Also another respondent states that:

> *"…most of managers tend to make decision based on their interests and priorities. This situation happened because there was no empowerment on legislation and rules, which should be compulsory in the use of technology…"*Resp (14)

On the other hand, some managers involved in this research argued that poor implementation of e-government is due to the lack of experience and there is no coordination and proper planning among managers in the various government departments. This has led to weak linkages between institutions of various governments, making incoherent decisions between the ministry and the others. There are also the decisions made by the whims of managers and commensurate with their vested personal interests.

A respondent stated that:

> *"... there are…lack of coordination and improper planning, slow responds or cooperation between official bodies and government agencies and lack of informed decisions, policies and legislation. We are also in shortage of constant/strong decision-makers and reliable senior management to support the evolution and the continuity of the e-government projects…"*Resp (10)

Another respondent argued:

> *"…there is lack of strong and permanent policy; these people [decision makers] can simply make any decision based on their interests. Thus, the objective of e-government projects cannot be accomplished…"*Resp (11)

The responses confirmed that the Policy and Legal issues is one of the success factors. Therefore, the e-government initiatives in Jordan need to establish strong senior leadership and appoint good decision-makers in implementing e-government successfully and for a long term. In one of the respondents' answers:

> *"…establish strong senior leadership and appoint good decision-makers. Issuance of new policies that could be taken as a guide in order to make difficult and tough decisions is also vital to ensure the success and continuity of e-government projects…"* Resp (14)

Policy and legal issues are important factor for the success of e-government. In order to successfully implement e-government, it is crucial to have strong policies and rules that can govern the e-government initiatives. Change in senior management leadership will affect the process of successful e-government implementation if there is a constant change in policies and laws.

4.3.3 **Top Management Support**

The interviews show that respondents have identified the top management support as one of the most important factors for the quick and correct successful implementation of e-government initiative. In this context, top management support plays a critical role in any initiation and adoption process. Consequently, top management support is considered one of the most factors to adopt e-government initiatives, whereby the strong top management has great power to influence other members' behavior within the organizations.

One of the factors that can promote effective good e-government is by having a long term strategic vision. Through long term strategic vision, top management can encourage the entire organization to learn and participate in e-government. In addition, by garnering strong support from top management, the necessary resources can be allocated to e-government program appropriately in high priority. The importance of strategic vision that is supported by top management was evident in the views of respondents. A respondent cites that:

> *"…support from decision-makers and senior management is essential in any e-government development..."*Resp (29)

Importantly, the support of senior management consists of several different aspects. For instance, top management will support the construction and development of e-government through critical decisions, make it mandatory to be applied between the ministries at the beginning and then to implement it by serving the people. Another respondent elaborates on this factor by saying:

> *" ... The absence of strong legislation and policies as well as biased decision-makers has complicated the implementation of e-government initiatives. Moreover, inappropriate ministry organizational and entire management structure also creates problems to correctly implement relevant electronic services…"*Resp (20)

It is also supported by another respondent, who says:

> *"…the most important option that can be taken to improve the implementation of e-government is by having undivided supports from the top management which can further enhance the political decisions. It can also become mandatory for ministries and government institutions to use information technology in their daily activities…"* Resp (23)

In addition, the importance of having fixed decisions really matters in the successful implementation of the e-government. The incoherent decisions will certainly contribute to the successful implementation of the e-government. The lack of he mutually agreed decisions has been a hindrance to e-government. One of the difficulties facing the implementation of e-government is when the decision makers have misused power that will later become the most important difficulties facing the implementation of e-government. One respondent states that:

> *"…Furthermore, abuse of power in the implementation process is often happened, by not putting the qualified person at the right position. Like other businesses, government body involves politics and it is hard to maximize expertise of staff when personal things are mixed with work…"* Resp (17)

One of the important elements of successful e-government is knowledge sharing and management. The development and failure of e-government is due to the ignorance of senior management about best practices in e-government and the lack of adequate

knowledge of the benefits of e-government and how to manage them in the right direction to achieve the desired objectives.

The following respondent highlighted on this point by saying:

> *"…the lacks of interest and insufficient knowledge on e-government among decision-makers and staff have further slowed the development of electronic government and its services. Most of them are also unaware on benefits of the e-governments which have brought lot of hurdles in the works…"*Resp (14)

Therefore, the successful implementation of e-government needs an obvious strong support from top managers as stated clearly in the series of interviews among the managers. The factor 'top management support' has been referred to for about 67 times. This resonate the top management support as being one of the top ten when the managers were interviewed about critical success factors of e-government.

4.3.4 **Reward System**

The implementation of an e-government initiative must be associated with a new reward system in order to overcome resistance to change and increase employees' and managers' commitment toward e-government's activities. It is important to activate the e-government system properly in order to achieve the desired goals. However, in the case of the Jordanian public sector, a structured reward system does not presently exist. The participants in this research therefore emphasized the importance of activation the reward system for the assurance of the successful implementation of e-government initiatives. One of manager commented:

> *"…poor financial support for projects and lack of government incentives and bonuses for employees are another problem we face as most of our talented workers tend to migrate to other places that offer better options…"* Resp (8)

Also commented that:

> *"… lack of incentives for qualified staff to continue the projects and create new things which may help the development of e-government implementation are also missing at present…"*Resp (8)

Based on interviews and comments from the respondents in this research, it is clear that the reward system refers to the offering rewards and benefits over and beyond wages, salaries and other monetary compensations to satisfy and hold desirable staff as well as to maintain their desired staff and owners to bring their experienced in government work and reducing their migration to the private sectors or outside the country. A respondent commented:

> *"… lack of incentives for experience and competent staff to continue an e-government project is also another problem and as a result, most of our employees prefer to migrate to foreign countries and private sectors for better income…"*Resp (7)

One of the respondents who were one of managers from Jordanian ministers stressed that:

> *"… Jordanian Ministries have lack of financial support and incentives/bonuses for staff. These incentives are important to keep our employees interested and keen with electronic services. Moreover, we also have lack of expertise, and without these incentives, most of employees tend to migrate to foreign countries or to other private sectors…"* Resp (14)

In summary, a government in developing countries must work for the successful implementation of the e-government initiative by offering job promotions, perks and monetary incentives. However, in the case of the Jordanian government, a structured reward system, other than job retention is necessary and does not exist currently. The responders therefore emphasized the importance of changing the reward system prior to the implementation of e-government initiatives. More importantly, the adoption of an e-government system must be associated with new rewards in order to overcome resistance to change and increase employees and managers for commitment to the e-government activities.

4.3.5 **Vision & Strategy**

The vision and strategy is one of the key factors in implementing e-government. This factor describes the broad understanding of e-government and what the Jordanian government is aiming to adopt and implement. Politicians and officials have a vision and a strategy for making an effective e-government. Moreover, the government is now moving towards a more citizen-centered government.

Through the collection of data through interviews, it was clear about the importance of proper planning for the development of e-government. Based on the interviews, the participants noticed that the e-government in Jordan lacked strong political decisions and did not have clear support for the process of the evolution of e-government. It can be stated that the vision and strategy was mentioned repeatedly about 54 times. It is among the first top ten factors from the analysis of interviews.

> Commenting on the importance of vision and strategy, one of the managers state that: *"…lack of studies and plans in implementing a powerful e-government. The real-world implementation does not commensurate with the realistic design and plans. Also the absence of strong policies and legislation for the implementation process was made even more difficult as the presence of ongoing changes in departments and senior leaderships of e-government…"* Resp (26)

As seen above, the lack of critical decisions in the development of e-government were due to the inconsistency of the decisions and legislation for a long time. It was also caused by the lack of continuity and stability of the decision-makers and politicians and the repetitive changes in the appointed managers and leaders of e-government. There were many changes in the decisions-making and legislation involving new administrations. This has led to poor planning for e-government management that was different from the real implementation of e-government. There was no consideration and appreciation of the real implementation in the future. It was reflected from the answers to some of the managers involved in this research.

The following response further accentuates the lack of focus in the implementation of e-government in Jordan. The respondent states that:

> *"…there are many changes in the policies due to the constant changes in senior managers' position in the ministry. Different people had come out with different agenda and as a result there was no continuity in the implementation of e- government programs…"* Resp (2)

In stressing on the importance of careful design of e-government, another respondent argued that:

> *"....improper planning and sloppy design of e-government projects have made the system inappropriate and does not match with reality..."* Resp (14)

In implementing effective e-government successfully, there should be an effective communication between and among ministries, agencies and managers. When there is a change in leadership, there will be also a change in policies and strategies for communicating effectively with another ministries or agencies. One of the respondent mentions that:

> *"....lack of sustainable policies and legislation, weak decision making, inadequate managerial support and poor relationships between government ministries in order to exchange information are the main reasons e-government projects are very difficult to operate successfully..."* Resp (6)

It is clear that having effective policies with effective managers are considered vital in e-government. The previous respondent was also supported by another respondent who states that

> *"...the lack of coordination and improper planning, slow responds or cooperation between official bodies and government agencies and lack of informed decisions, policies and legislation..."* Resp (10)

Undoubtedly, the successful implementation of e-government depends on many aspects such as the careful planning with the right decision-making plans and decision-makers who will ensure effective communication within the networks created in e-government. In order to produce responsible and efficient e-government in Jordan, there must be a change in leadership, management and support system as abrupt change will disrupt the smooth operations of e-government.

4.3.6 **Change Management**

The management of change is seen as the most difficult task facing Jordanian public organizations when replacing existing, traditional procedures. This is because each and every staff member has to help and support the change in organization management. One respondent states that:

> *"… lack of stability in top management and critical decision-making, which may stand firm and help in the development of the successful implementation of e-Government…"*Resp (4)

Continuous change in senior management and supervising the functioning of e-government is one of the main reasons for delay in the implementation of e-government appropriately. There is a continuous change in administrations, accompanied by changes in the laws and policies that underpin e-government. Due to the lack of stability in government departments, it takes much longer time to implement the agreed action plans and government projects. Moreover, as there is constant change in administrations in each small department, this leads to the change of plans and projects. One of the respondents explained it by saying:

> *"…The problems facing the Jordanian Ministry in the process of implementing e-government initiative are the constant changes in senior management and decision-makers …"*Resp (25)

Also another respondent states that:

> *"… another problem that commonly faced in this ministry is the lack of continuity in top management and cannot stand critical decisions. Fluctuate decisions and uncontrolled changes in top management position further affect the development and implementation of electronic government in this ministry…"* Resp (3)

Constant changes in senior management will cause changes in policies and critical decisions for the implementation of e-government. The change in management means each department has new administrator who has aspirations of new plans independently trying to prove his own way in the control and management of the e-government. In another response, a respondent said:

> *"…there are many changes in the policy and senior managers' positions in the ministry whereby different people come with different agenda and as a result there is no continuity in the implementation of e- government programs…"* Resp (2)

One of the respondents also explained in an interview that the lack of understanding managers with them and their cooperation's in the field of e-government and over a long period of time is one of the reasons for the slow development of e-government. He stated that:

> *"…the lack of understanding in e-government programs among senior managers also has created tremendous difficulties, for instances, by continuously changing senior management and decision-makers which lead to discrimination and delay the development process…"*Resp (14)

In ensuring the success of the implementation of e-government, there should not be a drastic change in managers and in managing e-government. There should be a continuous support in infrastructure and network that can sustain the e-government.

4.3.7 **Leadership Support**

Most Jordanian public agencies are administered as a one-man show, and most of these organizations are using the structure of managers for most of the positions,

including departments of finance, human resources, operations and information technology. Leadership in e-government context is closely linked with the political context, where successful e-government's implementation depends on the level of commitment and innovative vision shown by politicians or government officials who govern a country at the time. From the interviews, most of the respondents agreed that leadership from the senior management level was an important source of support during the implementation processes of the e-government initiative.

The term 'leadership' includes the senior ministers and decision-makers in the state. Moreover, the implementations processes suffer from several problems of e-government due to the lack of support from the senior leadership in the implementation and development operations. Based on the responses from the respondents, implementation of e-government needs to have a strong force from the senior leadership. The powerful and clear rules are critical to facilitate the process of implementing e-government programs. It is vital for the e-government to be given political decisions and encouragement from the top leadership in order to implement it without the objection. This point has been referred through the answer of a respondent where he said:

> *"…establish(ing) strong senior leadership and appointing good decision-makers. Issuance of new policies that could be taken as a guide in order to make difficult and tough decisions is also vital to ensure the success and continuity of e-government projects…"* Resp (14)

In addition, there are also some difficulties mentioned by the respondents, such asthe support of senior leadership who could point to weaknesses in the stabilization of the

laws and government projects. Furthermore, the continuous change in policy of the laws and rules based on personality and the imposition of weak as well as biased decisions adopted by the senior leadership have slowed down the success of e-government. Reiterating the problem, a respondent states that:

> *"…lack of sustainable policies and legislation, weak decision making, inadequate managerial support and poor relationships between government ministries in order to exchange information are the main reasons e-government projects are very difficult to operate successfully…"*Resp (6)

In the same context, another respondent mentioned that:

> *"…there is also plenty of weak critical decisions and lack of stability at the position of decision-makers and senior management, which always caused bias decision…"*Resp (27)

In the same point on weak critical decisions, a respondent said that there was about no continuity in leadership of e-government. He said that:

> *"…The main problems are that there is no continuity in leadership of e-government and we do not have strong stand in making critical decisions that may help the development and implementation of electronic government in this ministry…"*Resp (1)

In another response, a respondent pointed to the weakness of consistency and interaction between senior leaders, ministers and decision-makers as well as staff were one of the reasons for the weakness of the senior leadership in achieving the goals of the policy for e-government development. Thus, it reflects negatively on the stages of the evolution of e-government. He said that:

> *"…The interaction between senior management, ministers and staffs is also essential to stimulate the e-government development process…"* Resp (23)

This clearly emphasis on the needs of consistency and interaction can ensure the success of the e-government in Jordan. The strength of leadership is crucial in guaranteeing the successful implementation of the e-government.

4.3.8 **Organizational Structure**

Organization structure is a long-standing and chronic problem, especially for large organizations and ministries. The data collected in this study largely confirmed what has been reported in previous studies and research in regards to the problems in organizational structure for the ministries.

It is said that the success of any ministry and construction organization is to have a good organizational structure. Through the organizational structure of the implementation process, e-government projects can be made more visible and more mature. Building good organizational structures can help the distribution of powers among the managers, head of departments and staff. Moreover, with the presence of organizational structure, the distribution business is facilitated by the balance nature of work and specialization.

Thus, the imbalance in the distribution of powers between the staff where appointed profile officials are recognized and assigned according to competencies and expertise. This was evident from the comments of participants in this research where a respondent commented that:

> *"....reluctance of staff to implement and use electronic services, the absence of functional organizational structure in the ministry is another major problem. Without having a clear organizational structure, problem encountered during e-government implementation cannot be addressed by the right person..."* Resp (1)

As mentioned before, the poor organizational structure of the ministry and governmental organization entails several problems, as it was highlighted by many respondents. Where there is weakness in the construction of the organizational structure to the ministry due to the constant change in senior management and leadership positions for the e-government initiatives. The constant changes in senior management and leadership have caused problems in implementing e-government. In addition, continuous changes in the policies and decisions have pose insensitivity toward the implementation and evolution of e-government projects. This was evident from the comments of the participants in this research where one of the respondents commented that:

> *"....the absence of strong legislation and policies as well as bias decision-makers has complicated the implementation of e-government initiatives. Moreover, inappropriate ministry organizational and entire management structure also creates problems to correctly implement electronic services..."* Resp (20)

Another respondent commented that:

> *"...these difficulties include organizational obstacles in terms of the constant changes in the level of administrators and senior management, which has leads to the inconsistency on decision-making and has brought huge impact for a long time..."* Resp (22)

The success of e-government depends on the solid organizational structure that can enhance the plain sailing of e-government initiatives.

4.4 Technology Factors Analysis

This section describes the technological factors for e-government's implementation in Jordan and includes: Information Technology (IT) Infrastructure, Quality, Accessibility, Collaboration, User-Friendly, Security, Information Technology (IT) Standards, and Flexibility. As mentioned previously in the Literature Review, these are deemed essential to the success of e-government's initiative in the developing country. Figure 4.5 illustrates the technology factors and sub-technology factors that will lead to successful e-government's implementation in Jordan.

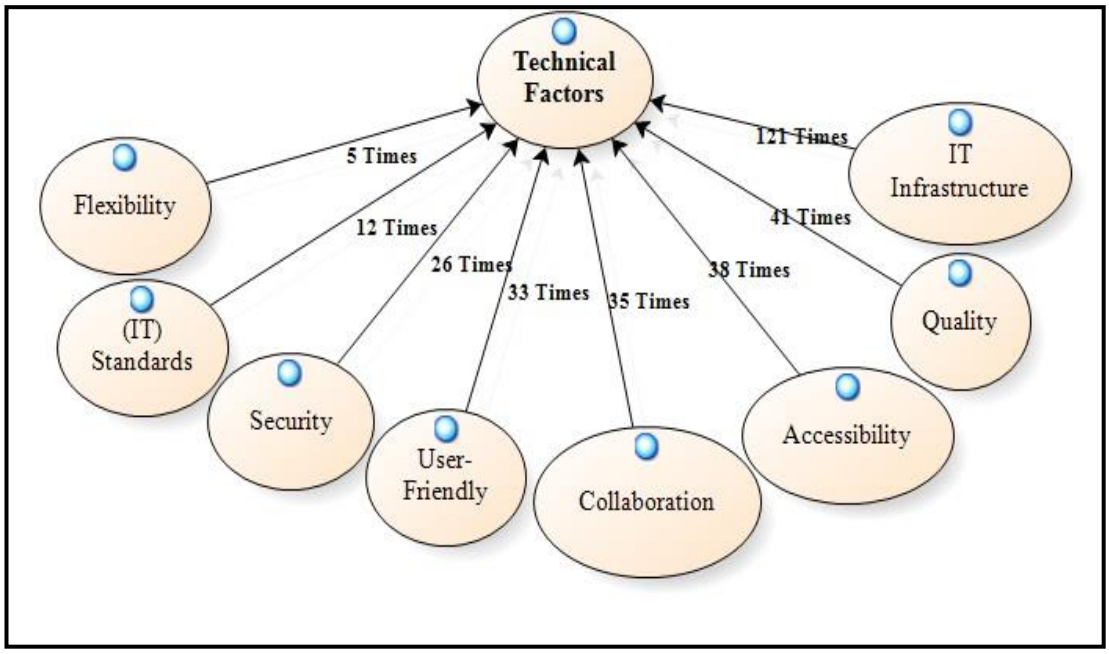


Figure 4.5. Illustrates the Technology Factor and Sub-success Factors that will lead to the Success of E-government Implementation in Jordan.

4.4.1 **Information Technology (IT) Infrastructure**

The IT infrastructure is one of the key elements in the technology factor. It includes many components of hardware, software, networks, connectivity and database

management systems. However, this factor was directed towards building a modern digitalized telecommunications network and active online websites in Jordan. Also it provides computers and Internet service to all government institutions.

Managers and decision makers claim that this technology factor was the most important and challenging component for developing countries like Jordan. Furthermore, they argue that it is the first step in bridging and narrowing the digital divides between rural and urban areas. It is also the first step in the establishment of e-government in providing electronic services to citizens equally everywhere.

A respondent who is an IT manager explained:

> *"…the most important option that can be taken to improve the e-government's implementation is by providing good infrastructure that will allow the development of powerful information technology applications…"*Resp (17)

Most developing countries are suffering from the problem of having poor infrastructure and means of communication for e-government as weak infrastructure of most major factors are affecting the implementation of e-government. One of the respondents stated that:

> *"…the lack of strong infrastructure also hinders the full implementation of e-government projects…"*Resp (14)

There is poor infrastructure for e-government projects in Jordan. Having good infrastructure is crucial for the country. Weak infrastructure such as the lack of connectivity will ineffectively exchange information among government ministries and among the departments of the ministry itself. The issue of infrastructure was highlighted by the respondent these in interviews of this research in the ministries of Jordan. In addition, there is a lack of electronic large databases about citizens among ministries.

Another respondent said:

> *"…the weak linkage between government ministries to allow exchange of information from one department to another department as well as poor infrastructure have resulted severe difficulties in completing the e-government projects…"*Resp (5)

Also another respondent said:

> *"…poor infrastructures, lack of computerized government programs and missing unified database which can store information from all the ministries have brought great challenges to us…"* Resp (10)

Moreover, many e-government projects and initiatives fail because of the lack of continuous updating of information across government websites and the continuous lack of qualified manpower for the development of e-government. A respondent cited that:

> *"…This includes the lack of strong infrastructure and most often there is no follow-up and update of information on the websites…"* Resp (29)

In the same light, there are a lot of opinions and suggestions of the decision-makers and managers involved in this study. Many feel that the restructuring and development of the infrastructure for e-government as one of the main reasons for the development and success of e-government. Furthermore, it includes the need for the development of strengthening internal networks as well as the need to transfer information and creates a conceptual database that will be available for all ministries characterized by the secrecy and high security. A respondent stated that:

> *"…provide strong infrastructure and the provision of e-mail services to all persons. In addition, the availability of qualified professionals and employees in this ministry also permitted government services to be offered electronically."* Resp (1)

Another respondent also said:

> *"…the best options that can be taken to improve the implementation of e-government are by increasing financial support for e-government projects, enhancing technical support, and re-creating the infrastructure that suit best for the successful e-government's implementation."* Resp (25)

All in all, the IT infrastructure is very important element that will ensure the smooth exchange of electronic information among the ministries. Failure to provide good infrastructure will certainly retard the development and the success of e-government's initiatives.

4.4.2 **Quality**

The main objective for e-government is to provide the e-services to users, particularly citizens, businesses and other government agencies as easily and quickly as possible.

It is well known that the success of e-government has successfully achieved the goals of the implementation where the success rate is measured by increasing the proportion of customers and users of e-government. Also it will also increase customers' satisfaction through the service quality of government agencies.

From this study and through the interviews, the participants focused on the need for the e-government to distribute high-quality services fairly and equally to all citizens in different geographical area. One of the respondents stated that:

> *"....People can access the information from any place without the traditional restriction of geographic barriers..."*Resp (1)

It is vital to ensure the quality of the different channels of communication in the process of conveying information to citizens and employees in government institutions. The quality of communication channels ensures the delivery of services to beneficiaries correctly, free of defects and without shortage. This has been clarified in the answer of the respondent:

> *"....good financial support for e-Government projects, and ineffective channels of communication to deliver and promotes e-government services..."*Resp (4)

The participants in this research said that the quality of e-government services ensures justice and equality in the delivery of information to the citizens and the provision of services away from favoritism and nepotism. In addition, citizens using of e-government will be more confident as they were sure that the information

provided is very reliable and protected by the government. This has been clarified by one of the respondents who stated:

> *"…Furthermore, it facilitates government transactions within high trenchancy framework and ensures the clarity and intelligibility of the information documented in the ministry. In addition, by moving toward electronic services, it also manages to avoid nepotism and favoritism, and provide a new platform to offer justice and equality between citizens and personalization at work..."*Resp (9)

Another respondent cited:

> *"…it also increases transparency of information and justice in distributing services to citizens. Besides that, all the information is stored in a large central database, which allows reduction of rumors and invalid information. As a result, by implementing e-government services in government institutions, it increases the accuracy of the information…"* Resp (16)

Jordan adopts e-government for many reasons such as to build the trust of their citizens and to improve the quality of services in the public sector with the hope of reducing cost and effort, as well as increasing the efficiency and transparency of government. In this study, the quality of e-government services has been considered to be a factor for the success of the implementation of e-government initiatives.

4.4.3 **Accessibility**

One of the greatly-desired and highly-pursued outcomes of this e-government initiative is the seamless integration of computer-supported government services. There is a need to increase the government accessibility in anywhere and is readily available for all people. The strength and success of e-government can be measured by the availability of means of communication and the ability to transfer high-quality

information in a large area. By providing ways and means of transmission of e-government services, infrastructure for e-government needs to be improved from time to time. In other words, the infrastructure for e-government and means of communication has been the most important factors that affect the success of e-government. Through interviews, the participants focused on the feasibility of providing the means of communications for citizens to share information through the Internet. One of the respondents cited that:

> *"…Government services can be provided to citizens at anytime and accessible from anywhere. Thus, any information can be obtained much faster and facilitate communication between government and citizens…"*Resp (3)

Another respondent elaborated that:

> *"…the availability of electronic information leads to another opportunity whereby the information can be accessed by everyone. E-government implementation also offers equal distribution and transparent information for all citizens in any place and any time…"* Resp (29)

One of the main problems facing e-government is how to deliver information equally to the citizens regardless of geographical constraints and distances. Many of the participants in this research said that the e-government in Jordan suffers from poor infrastructure, the inability to provide Internet service to citizens inside the kingdom, and the lack of ongoing maintenance for the means of communication to maintain the efficiency and continuity of the services. This has been further explained by one of respondents who stated that:

> *"…lack of effective channels for the citizens to participate and use the services, instability and unavailability of Internet service to all citizens and residential areas, and lack of continuity and maintenance of e-government applications."*Resp(5)

On the other hand, some participants mentioned that weak infrastructure within government ministries and the lack of existence of appropriate means of communication are barriers for the completion of full government transactions. Through the collection of data in the government ministries, it has been noted that some ministries suffer from slow or lack of Internet service. The lack of linkages between ministries to exchange information will leads to weakness in the completion of government transactions. Thus, it creates lack of confidence in its citizens. Another respondent stated that:

> *"…some departments in the ministry do not have Internet service and do not have an internal network to connect and access to government services. In addition, the slow speed of Internet makes the transaction incomplete…"*Resp (20)

Another respondent cited that:

> *"…Citizens play important role in e-government applications. Therefore, it is necessary for us to ensure satisfaction of the citizens for government e-services by observing the interaction between citizens and government institutions services…"*Resp (29)

To ensure the effectives of e-government in Jordan, it is important to provide quality Internet services for all citizens equally in all geographical areas. It is therefore necessary to provide Internet services to promote better transaction of information and interactions between citizens and government ministries as well as the government ministries.

4.4.4 **Collaboration**

Collaborative relationships among individuals or organizations found to be vital in facilitating and accelerating the stages of e-government's project implementation. It is one of the key factors which can lead government agencies to successfully implementing e-government's projects. Collaboration is one of the challenges that were identified during the interviews of the managers. Through the data collected from interviews, respondents focused on the importance of collaboration in IT, where the respondents pointed out that the collaboration between government organizations and between different sections of the ministries are needed to ensure the success of e-government implementation.

Collaboration between the government and private organizations as well as departments of the ministry they have been considered vital by the participants in this research. E-government in Jordan suffers from the lack of collaboration between non-governmental organizations and ministries. There are weak relationships among the Jordanian ministries. The ineffective exchange of key information and task as well as absence of a large database and inclusive of all information will certainly fail any efforts of implementing e-government.

Another respondent pointed to that by saying:

> *"… weak relationships between government ministries prevent exchange of information and have been determined as a problem in developing e-government services…"*Resp (7)

Another respondent also said:

> *"… in addition, with the availability of a comprehensive database, it could facilitate the work of ministries and citizens to get information from anywhere via the Internet…"*Resp (8)

Besides, the governmental organizations and ministries are suffering from poor coordination and ineffective proper planning by senior management. The different decisions and policies made by the ministries have led to weak participation and collaboration between the government and private organizations.

Another respondent cited that:

> *"…lack of coordination and improper planning, slow responds or cooperation between official bodies and government agencies as well as lack of informed decisions, policies and legislation…"*Resp (10)

Attention should be given to the power infrastructure of government organizations and ministries that plays a big role in the exchange of information. The poor infrastructure, lack of the presence of e-government programs, lack of the computerization of the data and the lack of skills and experiences of strong staff can be major causes of poor collaboration among organizations. A respondent states that:

> *"…weak link between government ministries to exchange information and poor infrastructure also have contributed great challenges in completing the projects. Moreover, the lack of strong skills and experience to support e-government is another problem that we are dealing with…"*Resp (4)

On the other hand, the co-governmental organizations and citizens need to have mutual trust as the most important thing is looking for citizens to participate in the procedures of e-government and to adopt in all matters of life. By using the existence

of the strong Infrastructure and by a comprehensive database of unified between governmental organizations and ministries, the e-government initiatives can be successfully implemented. A respondent also mentioned that:

> *"….Besides that, all the information should bestrode in a large central database, which allows reduction of rumors and invalid information. As a result, by implementing e-government services in government institutions, it increases the accuracy of the information…"*Resp (16)

It can be concluded that in implementing e-government in Jordan, there should be solid Collaboration among the ministries and government agencies that can further enhanced by four important elements: (1) The good and effective infrastructure, (2) the presence of e-government programs, (3) the computerization of the data and (4) skilled and well-trained staff.

4.4.5 **User-Friendly**

In order to make effective e-government service, service delivery process should be more user-friendly compared to services delivered by traditional channels. The success of e-government is triggered by the increased activities in practical life and government transactions. Through interviews and the results that have been obtained from the data collection, user-friendliness is one of the factors affecting the implementation of the e-government. The interviewees have clarify that user-friendliness factor is based on the deployment of justice and equality among citizens in Jordan. The factor helps achieve the goals of e-government by disseminating

justice, transparency and equality among citizens eliminating nepotism and favoritism among operators of e-government.

One respondent has stated:

> *"….by having e-government implementation, it also provides transparency and justice between citizens. As a result, e-government system can reduce discrimination and cronyism which have been a worldwide problem for many decades…"*Resp (3)

Another respondent emphasized that through participation in e-government, it requires efforts to get information in short period of time, thus creating e-government services that will be easier and friendlier. He cited that:

> *"…improves the availability and level of communication and exchange as well as increase the speed of transactions while saving time, efforts and money in the process of implementing the technology in the government services provided to citizens as they claim to provide justice between the citizens and transparency as well as reduce nepotism and favoritism…"*Resp (2)

In addition, some of the participants pointed out that active e-government in life would also be beneficial to the citizens and government institutions as its e-government will be easier for citizens to make transactions outside the country properly and free of mistakes. One respondent said that:

> *"… the availability of electronic information leads to another opportunity whereby the information can be accessed by everyone. E-government implementation also offers equal distribution and transparent information for all citizens in any place and any time. Moreover, it reduces corruption, nepotism and favoritism in the ministries and government institutions. In addition, it gives an opportunity to review the information and make sure the information's correct and easy to obtain..."*Resp (29)

The user-friendliness is imperative for the successful implementation of e-government where the needs of transparent and equal access to electronic information will speed up the transactions out of the country and reduce or minimize corruptions, nepotisms and favoritisms.

4.4.6 **Security**

In fact, the term 'e-government' is to move from the traditional way to the electronic way in the process of facilitating transactions and delivery of government services to its citizens. It also means that information that is kept manually will be converted to electronic records. This information is characterized as highly sensitive and confidential which must be protected from hackers and Internet criminals.

A great deal of attention has been given on securing e-government system by the Jordan e-government initiative as security issues are one of the main obstacles facing the implementation of e-transactions. This coincides with the main responsibility of the e-government project. The findings of this study emphasized the importance of security issues in e-government initiatives especially the e-government initiative in Jordan. According to the participants of this study, one of the key technological issues that should be treated carefully is the issue of security. One of the managers commented:

> *"…the Jordanian government is concerns about the e-government implementation in terms of information security, disclose of secret procedures and access on the databases…"*Resp (21)

Another respondent also commented:

> *"... Jordan may be concerned about e-government implementation for several reasons such as the level of information security and possibility of hacking databases ..."* Resp (15)

The Internet is basis for the Infrastructure of e-government initiative, the Internet abounds with criminals who steal valuable information such as credit card numbers as well as breaking into websites, hacking into e-government database and even intercepting and altering data while in transit. One of managers commented:

> *"...most of executive at government agencies are worried about the security information and they fear from hackers, which possibly can devastate important databases..."* Resp (18)

The security is one of the success factors identified in this study. Therefore, the e-government system in Jordan needs to incorporate advanced security system in order to ensure proper protection against fraud and other vulnerabilities at all levels of the government information infrastructure.

4.4.7 **Information Technology (IT) Standards**

Development of IT standards at the national level is a milestone to enable interoperability between different government ministries. The respondents in this study emphasized on the importance of building standards that can be used in all institutions of the IT public sectors. In addition, the data in this study showed that the infrastructure for IT to be implemented in several government organizations do not comply with the criteria for e-government success. For example, one of the members of the e-government said:

> *"…poor participation of responsible bodies and agencies also has limited the spread of e-government. Therefore, based on current situation, that's where every organization has its own databases without limiting information among the Ministries without the ability of another ministries or organizations to take advantage of this database…."*Resp (24)

Based on the respondents of this research, the success of e-government is facilitated by long-term proper planning. The importance of the exchange of experiences and information among government organizations within the country and between different governments of developed countries will help employ positive points and good decisions as well as policies in the next stage of the implementation process. Another respondent commented:

> *"…access to expertise and success of e-government initiatives in developed countries should be taken into consideration, so we can take some lessons and learn from them, Exchange of experiences amongst government departments, developed countries and private sectors are also essential to improve the e-government in Jordan…"*Resp (13)

The existence of IT standards will boost the speedy development of e-government projects. The effective networking and exchange of electronic database will help improve the successful implementation of e-government initiatives in Jordan.

4.4.8 **Flexibility**

The implementation of e-government initiatives need to have flexibility to accommodate a variety of systems. The flexibility is vital to accommodate different shifts from the traditional system to the electronic system important for the implementation of e-government. Through interviews, there was some focus for

flexibility, but some respondents focus on the flexibility in dealing with the citizens, and the ability to carry large numbers of citizens participating in the e-government projects.

The flexibility in e-government is one of the most important features and benefits of the implementation of e-government. The flexibility is crucial in order to accommodate e-government amendment in the regulations as needed, and adapt and to accommodate the requirements of users in the future of the e-government. Through series of interviews and information that have been drawn from the participants of this research, the establishment of e-government on the real life practical way will save time and money as well as effort and will also increase the confidence in its citizens.

One of the respondents commented that:

> *"… the advantages of e-government implementation are that it provides flexibility in time, consumes less money and efforts. By using electronic services to conduct transactions, we also can increase transparency and reduce nepotism and favoritism, which allow us to provide justice and equality between citizens…"*Resp (6)

Also another respondent commented on the same issue when he said:

> *"…The advantages of e-government are flexibility in time, economical and easy to complete government operations and transactions…"* |Resp (14)

Having flexibility allows e-government to be more practical for its citizens. The citizens will enjoy the benefits of the e-government as the flexibility enables citizens

to carry out businesses involving better and more quality Internet services. The e-government that is flexible will accommodate itself and improve its systems in the future.

4.5 People Factors Analysis

This section describes the people factors which are also a key part for the successful factors in the process of implementing the e-government initiatives. In this study, the people factors include: Awareness, Users' Computer Efficacy, Resistance to Change, Training and Trust. Figure 4.6 illustrates the people factors and sub-success factors that will lead to successful e-government's implementation in Jordan.

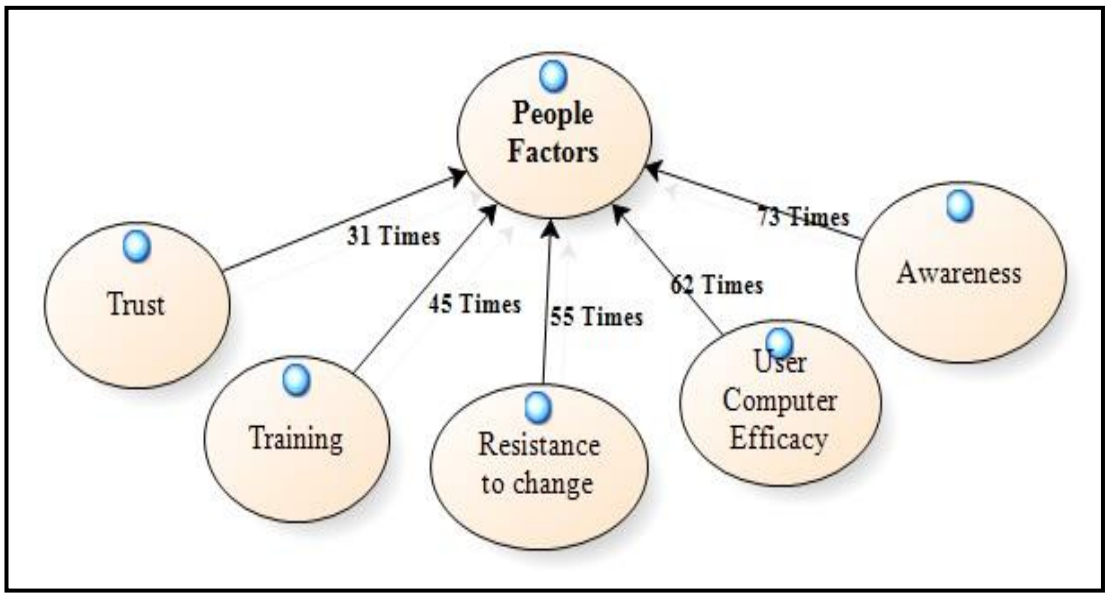


Figure 4.6. Illustrates the People Factor and Sub-success Factors that will lead to the Success of the E-government Implementation in Jordan

4.5.1 **Awareness**

According to participants in this research, awareness is another important factor in implementing e-government initiatives and in helping to realize the future benefits of e-government services.

The lack of awareness is one of the important (direct) reasons for the failure of e-government in developing countries. In addition to that, efforts should be directed to institutions of public and private sectors to increase their knowledge and information through conferences, seminars and workshops. The success of e-government in the state will be realized if the government can train more employees to be more aware of the benefits of e-government.

One respondent said that:

> *"…This is mainly attributed to lack of sufficient awareness of the electronic services which have been provided by the government, and most of the people also are unaware of the benefits of these services, which deter them to apply these services…"* Resp (1)

Another respondent articulated that:

> *"….the lack of awareness about the e-government benefits because of most of our public has not been receiving enough guidance through the media or other channels regarding the advantages of e-government…"*Resp (5)

Another respondent said that:

> *"… One of the best ways that can be taken to increase the effectiveness of e-government applications is by providing guidance*

> *and awareness through media to the citizens about the benefits of e-government…"*Resp (10)

It is vital to encourage staff and managers as well as citizens to accept the e-government system and accept it as part of their daily operations. Through interviews with managers and decision-makers the research participants stressed on the technology changes and its impact on the success and failure of e-government.

One respondent said that:

> *"…some employees are resistant to adopt technology changes in accomplishing their tasks because of poor awareness and knowledge of the advantages of information technology…"*Resp (4)

The lack of awareness of the benefits of e-government and how to apply them have negative impacts heavily on the success of the e-government initiatives. The lack of awareness is one of the reasons for the public reluctance to accept the idea of e-government.

A respondent said that:

> *"… The problems facing the Jordanian Ministries in the process implementing e-government are the lack of sufficient awareness among citizens regarding the benefits of e-government and lack of motivation for the e-government implementation…"* Resp (1)

Citizens are also apprehensive about the implementation of e-government in their daily lives due to the lack of confidence in electronic transactions. The presence of high percentage of illiteracy among citizens in the use of computers also contributes to the failure of e-government. In addition, the inaccessibility of the Internet and

other technologies in villages and remote areas have further increase the lack of awareness about e-government.

One of the respondents cited that:

> *"... not all householders in Jordan can have the access to the Internet and computer service, and lack of significant support from cross-media to provide awareness on e-government programmers' through multiple means of communication…"* Resp (23)

Another respondent said that

> *"…poor Internet connection between people and the lack of awareness among the citizens about the benefits of technology have complicated the distribution of information…"* Resp (21)

Efforts should be directed on the needs to increase the awareness of the citizens and employees. The state should take the responsibilities to raise the level of awareness among individuals and public organizations. Moreover, the government must declare their commitment to adopt technologies and redesign e-government processes that will further benefit e-government service delivery. Awareness, commitment and priorities in the strategy of ICT need to be part of the planning for e-government. There is a need to raise awareness by providing citizens and government employees with the knowledge and skills necessary to interact with the new work environment.

One respondent said that:

> *"… Training courses and guidance throughout the projects should also be provided in order to increase the awareness and perception of the citizens towards the benefits of online services."*Resp (3)

Another respondent also said that:

> *"…Awareness of e-government's benefits among citizens can also be improved through media; meanwhile we can provide training/workshops to the government staff in order to guide them on how to actively engage in e-government implementation."* Resp (6)

Undoubtedly, the government should increase the knowledge about e-government, provide effective delivery of e-government, improve infrastructure of the Internet accessibility and services as well as design training in educating the public on e-government that will gradually help citizens gain public trust and confidence.

4.5.2 **User Computer Efficacy**

Self-efficacy is the belief that one has the capability to perform a specific task correspondingly and User Computer Efficacy refers to the ability of a citizen in using a computer. Through interviews, there was a big focus on the problem of the lack of efficiency of the staff and their lack of expertise in the field of computers and modern means of communication. Jordanian ministries suffer from lack of staff that has practical experience in the computer field which leads to slowness in the success of the implementation of e-government initiatives.

One respondent said that:

> *"…Lacking skills and expertise among employees to support the e-government program is another challenge…"*Resp (9)

Another respondent also said that

> *"…most of our staff does not have experience and/or skills that are required to develop and maintain e-government implementation…"*Resp (5)

Moreover, the reason for the lack of staff with expertise in the field of e-government is due to the lack of support and incentives for employees. Through this study, it was clear that most of people prefer to immigrate to work in the neighboring countries of Jordan, or migrate to the private sectors because the foreign industries provide employees with incentives and financial efficiencies. It has been inferred through the participation of two respondents: Resp (7) and Resp (14).

One respondent said that

> *"….Lack of incentives for experience and competence staff to continue e-government projects is also another problem. As a result, most of our employees prefer to migrate to foreign countries and work in private sectors for better incomes…" Resp (7)*

Another respondent stated that

> *"…we also lack of expertise and without these incentives, most of employees tend to migrate to foreign countries or to work in other private sectors…"*Resp (14)

Most of the participants noticed that the lack of strong policies and political decisions in the implementation of e-government leads to laxity in the e-government's implementation. It is also vital to have effective employees in e-government. Thus, there is a need to enroll them in training courses that can further improve their skills and expertise in e-government administrations.

One of the respondents stated that

> *"…whereby the implementation still needs strong policies, legislations, strong human capitals and financial supports to efficiently develop successful e-government projects…"* Resp (29)

To overcome the problems of immigration of employees and migration of workers to private sectors, the participants in this research have suggested the need to attract staff with expertise in the field of e-government to continue working in the country by providing them with financial support and incentives to remain working in Jordan. It is important to encourage them to remain in Jordan by providing quality training courses/programs for them to increase their efficiency and to raise the level of awareness, skills and knowledge.

This was evident by what has been said by one of the respondents in the interviews. He said that:

> *"…we can also attract experts to work with us and provide competencies training for our staff. As a result, we can increase the efficiency of workers and assign the right persons for the specific kind of job…"*Resp (17)

The success of e-government relies heavily on the skilled employees with computer skills. In order to keep the competent employees working in the current companies in Jordan, there is a need to provide continuous training programs to upgrade their knowledge, skills, abilities and capabilities as well as to provide financial support and reward systems.

4.5.3 **Resistance to Change**

In order to improve quality of life, change is a must in our lives. The transformation for e-government will have major impact in politics, economics, culture and social life. Changing requires the replacement of handmade things and traditional ways with electronic methods that will help conduct transactions and provide services.

Through interviews, there was a clear over the reluctance by employees in government institutions and citizens to accept the idea of e-government and keep traditional ways of handling information.

One respondent said that:

> *"…the reluctance of citizens and staff from using technology tools in handling government transactions has further complicated the process..."*Resp (17)

One of the reasons for the failure of effective implementation of the e-government initiatives is due to the lack of change in using effective and electronic ways in e-government.

The respondent supported this by stating that:

> *"…lacks of acceptance of electronic services and rejection to use technology by employees also have been discovered as function matters that determine failure of e-government project…"*Resp (2)

The change in government transactions from traditional methods to electronic methods is not only limited to the staff in all government departments but also the citizens at all over the places. The reasons for the reluctance of employees in

government departments to use the technology are due to their ignorance of technological development. Furthermore, there is a fear of losing their jobs if the government switches from traditional methods to electronic methods.

One of the respondents said:

> *"…some employees are resistant to adopt technology changes because they fear of losing their jobs and they do not have awareness of e-government…"* Resp (5)

The reluctance of citizens and non-acceptance of e-government transactions by electronic means are due to the fear of the citizens from using the technology and their lack of awareness as well as confidence in the use of electronic methods and knowledge about e-government transactions technology. This is also worsened due to the lack of training courses and media education for citizens.

One of the respondents added that:

> *"…a large number of our citizens are hardly accepting the e-government's implementation because of their lack of confidence in the electronic services and misinformation about e-government's benefits…"*Resp (6)

Another respondent said:

> *"…poor participation of citizens in e-government projects by rejecting the idea to conduct government transactions electronically is another challenge that we are facing. This scenario occurs due to the lack of confidence in the e-government and lack of awareness about its advantages…"* Resp (7)

To ensure the success of the e-government, there is a need to bring about change as it helps improve the quality of e-government services and deliveries. The failure to educate citizens about the benefits of e-government will lead to the failure of the implementation of e-government. By inculcating awareness and confidence, it helps to change the government operations from the traditional ways to modern ways that will lead to the success of e-government.

4.5.4 **Training**

One of the major areas of concern in the successful implementation of e-government initiatives is human capacity development. This is important for adoption of e-government. However, this will require sizeable training programmers' for all the country's public and private sector personnel's. A member of participants commented that:

> *"... One of the best ways to improve the implementation of e-government is to provide guidance and media awareness for employees and citizens through training programmers' and workshops. The training and workshops are important for educating e-government employees about some benefits of e-government and polish their skills".* Resp (3)

Another respondent also mentioned:

> *"The best option that can be used to improve and increase the effectiveness of e-government implementation is by establishing a special budget for training the staff."*Resp (13)

One of the respondents commented on this subject:

> *"... training courses for staff and citizens are important in order to enhance the capacity and efficiency in developing electronic services..."* Resp (18)

A number of studies highlight the importance of providing training courses for citizens and government staff. These training courses are said to be very valuable as it provides opportunities for training and the learning of basic ICT skills. Providing training courses on the use of the computer and how to successfully run electronic government will facilitate the government transactions. Over the years, International Computer Driving License (ICDL) certification has been granted for most employees of the public sectors in Jordan. However, the most important project related to ICT in the public sector of Jordan was "Eradicating Computer Illiteracy for State Employees". A large leap in ICT literacy was witnessed in a short period of time. The purposes of this project are to promote a culture of ICT among state employees, eliminate illiteracy and provide confidence in using computers and new technologies.

Although training programmers are now seems to be more systematic, many public and private sectors or agencies are still facing some challenges as they provide multi-dimensional and multi-level training programmers

One respondent stated that

> *"... there are many difficulties which hinder the e-government's implementation, for example, having incompetent staff, insufficient training courses for staff, poor understanding and acceptance of electronic services, and the refusal to embrace benefits of e-governments' implementation."* Resp (15)

Interviewees showed awareness and expressed concern about the many challenges facing the training programmers and projects. The main challenge is enormous digital divide between rural and urban areas in terms of computer literacy and accessibility to the Internet. Even though many have attended the programs and initiatives with ICT at various levels, the number of qualified competent staff with the necessary ICT skills is still very limited. One respondent said:

> *"... We also should work on providing guidance and awareness to citizens through the various media and enlighten their knowledge about the benefits of electronic government. On the other hand, courses and training programmers about the usage of e-government and their benefits should be given to staff of various institutions."*Resp (19)

In ensuring the effectiveness of e-government in the country, providing quality Continuing Professional Development (CPD)/on the job training and training programmers' from time to time is very important for the sustainability of the initiatives.

4.5.5 **Trust**

From the information gathered in the interviews and the opinions of the participants in this study, trust factor is one of the key factors led to the success of e-government's implementation. Loss of confidence and non-acceptance by citizens certainly leads to the failure of e-government. Furthermore, the e-government will fail if there is no trust among the citizens towards the operations and services of e-government. One of the respondents said that:

> *"…we can clearly see poor participation of citizens in e-government projects. This is due to the lack of confidence in the e-government services and misinformation on the benefits of using e-government implementation…"* Resp (11)

Jordan is one of the developing countries that supports e-government and is also suffering from the slow evolution or progress of e-government. Due to the needs and importance of e-government, the Jordanian government has been concerned over the weaknesses in the implementation of e-government and lack of efforts to gain public trust and confidence. This has been stated in the response of one of the respondents.

Another respondent stated that:

> *"Jordan is concern about e-government's implementation even though we are facing certain problems such as the lack of confidence among citizens in electronic services and anxious about information security".* Resp (16)

The lack of confidence and awareness occurs when the citizens are not aware of the benefits of e-government's services. Besides, most citizens do not have sufficient knowledge and information concerning the benefits of e-government. Only after citizens have been educated on e-government, the citizens will begin to accept the idea of e-government. This was evident by what has been said by one of the respondents.

One respondent cited that:

> *"….the weak mutual trust between citizens and government institutions is a major difficulty for us in order to implement e-government programs…"* Resp (11)

Another respondent said that:

> *".. Most of users feel reluctant to use new technologies, as they do not have confidence, trust or lack of knowledge on these technologies…"*Resp (20)

Through what has been mentioned earlier, it is clear that increased confidence will improve the e-government services. In order to increase the confidence in citizens to accept e-government, awareness for the e-government services through various traditional and modern media can be inculcated. It was mentioned by one of the respondents that:

> *"…The most important options that can be taken to improve the implementation of e-government are by inspiring and encouraging citizens to boost their confidence through counseling and awareness messages via various media…"* Resp (21)

The confidence of the citizens can be enhanced through their training sessions on how to leverage technologies in everyday lives and e-government transactions. In addition, one of the effective ways to increase confidence and increase the awareness of citizens and employees is by offering those incentives as well as support in using and integrating technologies related to e-government in everyday life.

One of the respondents stated that:

> *"… the development of e-government is still in the very beginning stage and needs a lot of confidence from various levels of users and strong financial support and assistance from senior management…"*Resp (21)

It is crucial for Jordanian e-government agencies to build public trust and gain public confidence in supporting e-government initiatives. The knowledge and information related to e-government can be further enhanced through the use of traditional and modern media.

4.6 Verification CSFs

This section determines and verifies the CSFs for successful e-government's implementation in Jordan. These factors were determined through panel of experts by assessing the key factors for the success of e-government with the aim of answering the research questions and fulfilling the research objectives. The Delphi method was used in this research study as it provides the researcher with a flexible and adaptable tool to verify and analyze data.

4.7 Process of the Delphi Technique

A Delphi technique is a regular iterative process, normally conducted two to four rounds, involving a series of questionnaires, where each round is based on the results of the previous round. The results of questionnaires in each round are compiled after analysis and returned to the experts. Over the successive iterations and observations of the results, the experts are able to re-evaluate their responses in light of complied responses of all experts. Responses to the questionnaires are made anonymously. The experts are known to the researchers but not necessarily to the other participants. The anonymity of panelists enhances the possibility that opinions expressed by others are considered without influencing the person who expressed the opinions. The Delphi

technique is a flexible tool, built on four basic attributes: "structured questioning, iteration, controlled feedback, and anonymity of responses" (Lang, 1995). There is several advantages of the Delphi technique. According to Fletcher & Marchildon (2014) and Linstone and Turoff (2002), it can be used to collect information from a geographically diverse group of participants. In addition, the anonymity of panelists will reduce the halo effects associated with the opinions of the prominent participants. Mention that the panelists have the time to carefully evaluate their answers before responding to the questionnaires. Figure 4.7 explain the process of experts review by using Delphi technique. The process is explained in detail in Section 4.7.1, to 4.7.4.

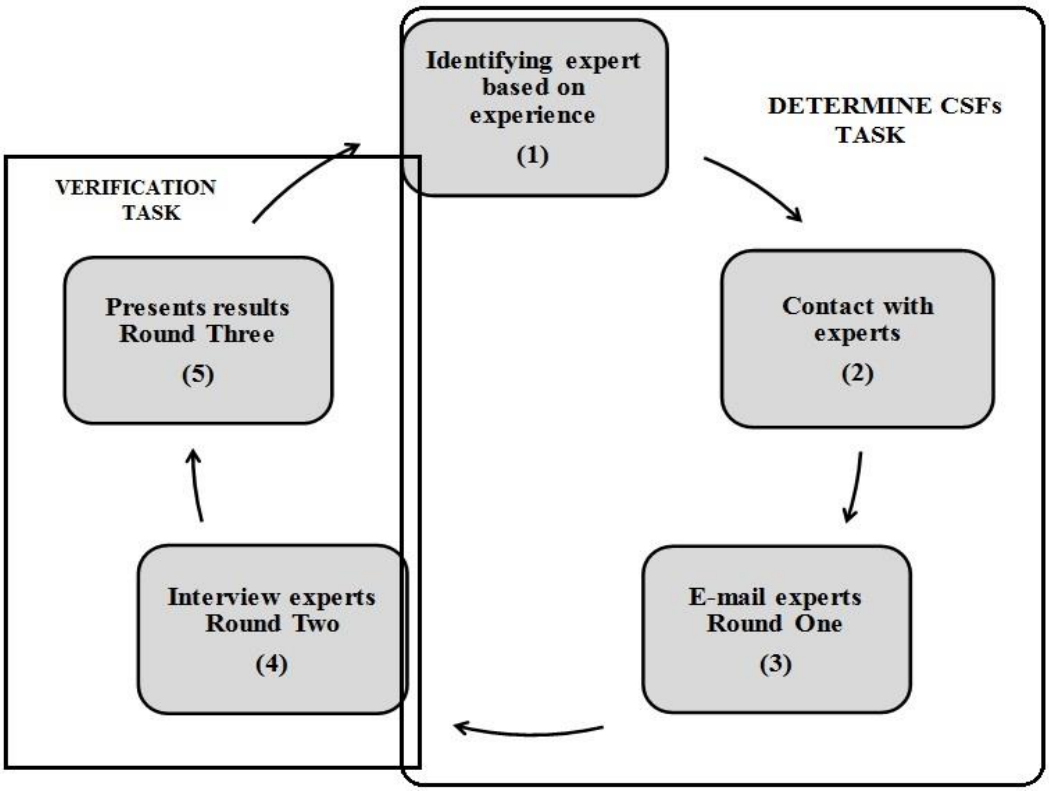


Figure 4.7. Experts Review Process

4.7.1 **Identifying Expert Based on Experience**

The main objective of this research study is to determine the CSFs for e-government's implementation in Jordan to develop e-government implementation model for Jordan. This requires an expert panel in e-government field to determine the CSFs. A panel of experts was identified to take part in the Delphi method. Nine researchers were selected as experts in e-government based on their publications and their rich knowledge as well as experience in this field. The experts were selected from three Jordanian ministries, namely the MOICT, the Ministry of Labour and the Ministry of Education. The profiles of experts are presented in Appendix: M.

The sample size of Delphi panels can vary widely, however there is a disagreement about what constitutes an appropriate panel size. Some researchers have indicated that 15 to 30 people produce good results in a homogeneous panel (Clayton, 1997). According to Adler and Ziglio (1996), 10 to15 people are able produce good results in a homogeneous panel. In another literature, according to the views of a number of researchers, groups of 6 to 12 members were determined to be optimum (Hogarth, 1978; Mitchell, 1991).

Fifteen experts were contacted to participate in this study that seeks to get their opinions about factors that can be considered to be the CSFs for e-government's implementation in Jordan. However, only nine experts have expressed their willingness to participate in this research. All of the experts were contacted through emails and social networking site (Facebook).

All the experts were from the three Jordanian Ministries. Therefore, it was easy to conduct a face-to-face meeting with them personally. Emails, mobile phones and social web site (Facebook) were used as an instrument to arrange the meetings with those experts. Table 4.1 shows the schedule of the expert meetings. The meetings were meant to identify the CSFs for e-government's implementation in Jordan, discuss the importance of these factors and how these factors affect on the successful implementation of e-government in Jordan. Three round of meeting had been done with each expert, two times via email and one time with the face-to-face interview. Details are explained in Section 4.7.2 to 4.7.4

Table 4.1
The Schedule Expert Reviewers Meetings

Expert	**Round One (By Email)**	**Round Two (By Interview)**	**Round Three (By Email)**
Expert 1	7, July, 2013	14, July, 2013	20, August, 2013
Expert 2	7, July, 2013	15, July, 2013	22, August, 2013
Expert 3	7, July, 2013	15, July, 2013	25, August, 2013
Expert 4	7, July, 2013	30, July, 2013	25, August, 2013
Expert 5	7, July, 2013	6, August, 2013	18, August, 2013
Expert 6	7, July, 2013	6, August, 2013	19, August, 2013
Expert 7	7, July, 2013	7, August, 2013	26, August, 2013
Expert 8	7, July, 2013	8, August, 2013	5, September, 2013
Expert 9	7, July, 2013	11, August, 2013	5, September, 2013

4.7.2 **Results of Round One**

After identifying, contacting, getting acceptance from the nine experts, the first round of the verification stage began by sending the questionnaire and factors definitions through e-mail. This round is aimed at giving the experts the opportunity to study the

factors carefully and determine the degree of importance of each factor on the success of e-government. The time limit for sending their feedback is about one week. The experts were asked to assess the level of importance of each factor on the development and success of e-government. The questions of this part consist of a scaled-response from 1 to 5, where (1): Not at all important to (5): Extremely important). Table 4.2 shows the definitions set standards and demonstrates the level of compatibility of each interval scale.

Table 4.2
Interval Scale for the Importance of Implementation

Mean Interval presentation	**Degree of Compatibility**
From 0.1 To 1	Not at all important
From 1.1 To 2	Not very important
From 2.1 To 3	Fairly important
From 3.1 To 4	Very important
From 4. 1 To 5	Extremely important

As shown in Table 4.3, mean values were used to determine the degree of importance of the each factor in the development and success of e-government whereas the mean values between 0.1 to 1 represents not at all important, between 1.1 to 2are considered not very important, between 2. 1 to 3is considered fairly important, between 3.1 to 4 is very important, and between 4. 1 to 5 represents extremely important. Table 4.3 presents the degree of importance of each factor from CSFs for the e-government implementation in Jordan.

Table 4.3
Delphi First Round Results

Expert / Factors	Exp 1	Exp 2	Exp 3	Exp 4	Exp 5	Exp 6	Exp 7	Exp 8	Exp 9	Avge	Levels of Important
F1	5	5	5	5	5	5	5	5	5	5	Extremely important
F2	5	5	4	5	5	4	5	5	5	4.78	Extremely important
F3	5	5	4	5	5	4	5	4	5	4.67	Extremely important
F4	5	5	5	3	4	5	5	5	3	4.44	Extremely important
F5	4	4	4	3	3	4	4	3	5	3.78	Very important
F6	4	5	4	4	5	5	5	4	5	4.56	Extremely important
F7	4	3	4	4	4	5	4	5	5	4.22	Extremely important
F8	3	4	4	5	5	5	4	5	3	4. 20	Very important
F9	5	5	4	3	5	5	5	5	5	4.67	Extremely important
F10	3	5	4	5	5	3	3	3	5	4	Very important
F11	4	4	4	4	5	3	3	4	5	4	Very important
F12	5	5	5	5	5	4	4	4	5	4.67	Extremely important
F13	4	5	4	4	4	5	4	4	5	4.33	Extremely important
F14	3	5	5	4	5	5	4	4	5	4.44	Extremely important
F15	2	5	3	4	5	4	3	5	5	4	Very important
F16	3	4	4	4	4	4	4	4	5	4	Very important
F17	4	5	3	5	4	5	5	5	5	4.56	Extremely important
F18	4	5	4	4	3	4	5	5	5	4.33	Extremely important
F19	4	4	4	5	3	4	5	5	5	4.33	Extremely important
F20	5	5	4	4	5	3	5	5	5	4.56	Extremely important
F21	4	5	3	5	5	4	5	5	5	4.56	Extremely important

F1: Vision & strategy
F2: Top Management Support (Political Support)
F3: Leadership support, Dominance of politics/ Self interest
F4: Funding
F5: Organization Structure
F6: Change Management
F7: Policy and Legal Issues
F8: Reward System
F9: Information Technology (IT) Infrastructure, ICT
F10: Collaboration
F11: Information Technology (IT) Standards
F12: Security
F13: Flexibility
F14: Quality
F15: Accessibility
F16: User-Friendly
F17: Trust
F18: Training
F19: User Computer Efficacy
F20: Awareness
F21: Resistance to change

The panel experts in the first round were determining the amount importance of each factor that influences on the success of e-government's implementation in Jordan. The results of the first round has been tentatively identified the most important CSFs for the implementation of e-government in Jordan. These factors got the highest average score as shown in the Table4.4. The first ten factors that got the high average score in first round are: Vision & strategy (5), Top Management Support (Political Support) (4.78), Information Technology (IT) Infrastructure (4.67), Leadership Support, Dominance of politics/Self interest (4.67), Security (4.67), Funding (4.56), Change Management (4.46), Trust (4.56), Resistance to Change (4.56) and Trust (4.56). The output of this round will be the input that will be given to experts during the second round of Delphi technique.

4.7.3 **Results of Round Two**

After completing the data collection and analysis in round one, the results were prepared as input to be used in the second round. The second round was needed because there was no consensus amongst most of the experts' responses in determining CSFs for e-government's implementation. In fact, some of the responses were not clear and inaccurate. There was no clear determination of the CSFs in the first round. In the second round, discussions were conducted with the nine experts to clarify and identify the CSFs and the importance of each factor and how each factor affects on the success and the development of e-government. It was also conducted to obtain some agreement on any discrepancies on determining the CSFs. The results

from the deliberations help to arrive at the agreement in identifying the CSFs for e-government's implementation in Jordan.

Before the second round was held, the dates and time of meetings were determined with the experts through personal email. To efficiently conduct the discussion sessions in the second round, semi-structured interview method was used so that consensus can emerge as one representative opinion from all the experts. However, there was no agreement on the CFSs. As for the inputs for second round, the results from the first round were sorted based on the suggestions about the level of importance for the CSFs that have been selected by each expert. The results were then shared with each expert during the interview. The results of the first round gave them the opportunity to study the opinions by other experts in order to come out with another set of CSFs.

During the second round, the experts were again asked to determine the CSFs in the implementation of e-government initiative in Jordan, and reasons for their selection of each factor and how every factor affects the development and successful implementation of e-government. From the twenty two success factors, and top ten was coming from the result of round one, the top seven CSFs had been determined from each expert. Table 4.4 presents the result of the second round.

Table 4.4
Delphi Second Round Results

Expert / Factors	Exp (1)	Exp (2)	Exp (3)	Exp (4)	Exp (5)	Exp (6)	Exp (7)	Exp (8)	Exp (9)	Total	Percentage
F1	√	√	√	√	√	√			√	7	78 %
F2	√	√	√	√	√	√	√		√	8	89%
F3			√					√		2	22%
F4	√	√		√		√	√	√	√	7	78%
F5	√									1	11%
F6	√		√	√	√			√		5	56%
F7						√				1	11%
F8										0	0
F9				√	√	√	√	√	√	6	67%
F10			√					√		2	22%
F11				√						1	11%
F12							√			1	11%
F13							√			1	11%
F14						√				1	11%
F15								√		1	11%
F16						√				1	11%
F17					√					1	11%
F18	√	√								2	22%
F19		√	√				√	√	√	5	56%
F20		√			√		√		√	4	45%
F21		√	√	√	√				√	5	56%

F1: Vision & strategy
F2: Top Management Support (Political Support)
F3: Leadership support, Dominance of politics/ Self interest
F4: Funding
F5: Organization Structure
F6: Change Management
F7: Policy and Legal Issues
F8: Reward System
F9: Information Technology (IT) Infrastructure, ICT
F10: Collaboration
F11: Information Technology (IT) Standards
F12: Security
F13: Flexibility
F14: Quality
F15: Accessibility
F16: User-Friendly
F17: Trust
F18: Training
F19: User Computer Efficacy
F20: Awareness
F21: Resistance to change

By analyzing the Table 4.4 and get the analysis percentage the factors, seven factors have been determined as CSFs for e-government's implementation in Jordan through, that are have above of 50% percentage of the vote from views of nine managers and decision-makers. The results were as follows: Top Management Support (89%), Vision &Strategy (78%), Funding (78%), (IT) Infrastructure (67%), User Computer Efficacy (56%), Change Management (56%) and Resistance to change (56%).

4.7.4 **Results of Round Three**

From the second round, the data were collected and analyzed. From all the answer of the experts, the first draft of the CSF for e-government implementation was generated. In this third round, the e-mail was used to communicate with the experts in determining the final list of CSFs. As a result from this round, majority of the experts agreed with the CSF for e-government implementation in Jordan. The consensus of the experts has significant reduce the needs for repeating the second round.

4.8 Critical Success Factors for E-government Implementation in Jordan

Seven factors as CSFs result from determination and verification stage by using Delphi technique was determine as a CSFs for e-government implementation in Jordan. The seven factors as follow: Top Management Support (89%), Vision & Strategy (78%), Funding (78%), (IT) Infrastructure (67%), User Computer Efficacy (56%), Change Management (56%) and Resistance to Change (56%).

The following discussions and suggestions for the reasons to choosing these factor from the experts, also how of each factor affects on the success of e-government implementation in Jordan as a CSFs. Section 4.8.1 to 4.8.7 discuss these factors.

4.8.1 **Top Management Support**

Top Management Support is prominent CSFs in the growth and promoting e-government programme at any government agencies. As shown in Table 4.4, 89% experts proposed the importance of Top Management Support in implementing e-government services in Jordan. Determination in implementing e-government can be achieved through firm decisions and support from the top managers. As a result, top managers can assist in motivating the staffs to align their work with the department's mission in developing and offering electronic services to the public. A close supervision from senior managers will definitely help the staff accomplish the tasks at specified time.

Furthermore, that, top managers can also closely monitor the strategic plans that have been designed earlier to facilitate the development process and reach the expected objectives. This not only assists in the implementation of e-government project but also could offer support and motivation for staff to accept the new technologies. Moreover, top management is also responsible to provide all requirements that are needed in implementing the successful e-government services. For example, the top management is in charge of offering good infrastructure, which could transfer the information and services equally to all citizens in Jordan regardless of their different geographical areas.

The e-government is a national programme and it requires strong and accurate decisions in order to translate those plans into actions. Hence, the continuing support of senior leadership is important in ensuring the resources are sufficient and staff personnel's are working in harmony toward the implementation of successfully e-government programmes. Accordingly, top management can offer a reasonable incentive for staff who is involved in the development of e-government projects. This may inspire them to highly participate in the electronic services and sustain their commitment for a long period of time. In addition, these incentives may increase the competencies among staff and these are beneficial for long-term projects. Besides moral and financial support, top management also can provide training for staff so that they can operate e-government services efficiently. This eventually can help in implementing successful e-government projects

4.8.2 **Vision & Strategy**

Vision and Strategy is one of the CSFs in determining the success of e-government's implementation. Based on the expert shown as provided in Table 4.4, 78% of experts agreed that vision and strategy play an important role in influencing the success rate of e-government's initiatives in Jordan. This could provide a clear blueprint and better layout for the implementation of any electronic services. This will help in providing an in-depth understanding on the strengths and weaknesses of organizations in terms of the available resources, enabling appropriate and feasible plans that can be designed to ensure the success of e-government.

By having a clear picture on the current state, any organization can wisely plan their project in order to minimize the difficulties during the implementation process. Moreover, number of closed down projects can be reduced. On the other hand, this factor supports the continuity of the project and ensures the completion of the implementation process on time. Having a clear vision and strategy helps the managers to develop the project based on the outlined design. This can eventually reduce the conflict among staff as the project will not tend or bias towards accomplishing the objective of specific person but will be more focused toward achieving and providing better services to the citizens. Mutual understanding between agencies can also be established at earlier stage to ensure the functionality of all parties and their commitment in developing successful e-government projects. In addition, a well-planned vision and strategy can also help in preparing a better roadmap to speed up the implementation process and develop a more advanced e-government stages, which could offer better services for its people.

4.8.3 **Funding**

Financial support is one of from the main factor that stimulates and triggers the success of e-government implementation. The financial aids provide a strong backbone support in the development of any e-government projects. Furthermore, it also ensures that the process can be put into practice and be used in real practice by the users. Based on this perceptive, 78% of experts consider financial support as one of the key factors that determine the success rate in e-government implementation in Jordan. In addition, the experts believed that an established and consistent financial

support is crucial in terms of providing appropriate infrastructure. The proper communications technology and services will help in offering electronic services to everyone in the country.

Moreover, stable financial support as well as reasonable incentives can be given to staffs in order to ensure that they can operate the new digital services to the maximum. Besides that, adequate financial support can lead to high commitment among staff and this can be beneficial in developing good electronic services. Suitable training courses can also be offered to citizens to enable them to exploit e-government implementation and functions to the fullest and assist those who are still unfamiliar with electronic services. For such a reason, the financial support is one of CSFs in e-government implementation in Jordan. Funds available for training will certainly manipulate the success rate of e-government initiatives in Jordan.

Big project such as e-government generally requires large amount of funds in order to be on the track and follow the milestone. Therefore, lack of financial support can severely jeopardize the development of e-government projects and cause the project to be closed down. Additionally, strong financial support can also help the organization to predict and identify the potential road map in implementing e-government projects. Accordingly, this will provide better and proper future plans for e-government projects. In addition, it also helps in attracting qualified people to work in the development of e-government projects.

4.8.4 **IT Infrastructure**

The IT infrastructure is the basic element in the development of any e-government project. As a result, this factor has been identified as one of the CSFs in determining the success of e-government implementation in Jordan. As shown in Table 4.4, 67% of experts have suggested that IT infrastructure is one of the CSFs in developing e-government projects. Most of these experts believed that the availability of IT infrastructure is the main key to provide the basic means of communication that can facilitate the delivery of information and services to citizens.

This is very essential since the availability of large databases, related technology and effective communication means are the prerequisite for the development and successful e-government program. Furthermore, the aims of most e-government projects are to enhance the accessibility and delivery of government's services to citizens that could be beneficial to them. By having the strong IT infrastructure, which is the most important pillars in the implementation of e-government services, proper quality of services can be provided to all citizens regardless their geographical locations. Eventually, it could increase the effectiveness of e-government implementation as more people will appreciate and use the e-services to the optimum level. Moreover, the access and implementation of e-government services can also be extended to the advanced stages if one has good and effective IT infrastructure. This will help in flourishing electronic services in Jordan.

In additional, the proper IT infrastructure could help various agencies (either government or non-government organizations) to exchange the information without

any hesitation of information lost. Exchange of ideas and expertise between these organizations could lead to better collaboration and efficiency in providing improved services to citizens. Ultimately, this can enhance citizen's trust and participants in using e-government services.

4.8.5 **User Computer Efficacy**

The implementation of e-government requires computer self-efficacy which refers to users' capability to access and use the electronic services in order to deal with government agencies. Computer self-efficacy is defined as the capability of users to operate and perform a specific task using a computer. However, most people in Jordan still cannot use computer and related technologies such as e-mail effectively. In such case, it has caused some difficulties in ensuring the usage and implementation of e-government. Therefore, the experts believed that it is important to educate Jordanians on how to operate comfortably in information-rich and IT-enabled environment and to enable them to actively involve and use e-government systems as maximum and optimal as possible.

In addition, the electronic literacy among citizens is another important factor to increase their confidence in using technologies to do daily activities. Hence, this will lead and increase the tendency of people to use e-government's implementation after they have attended extensive training. Eventually, this type of training will improve users' perceived ease of use of the technology and ultimately increase their motivation to apply e-government services. Moreover, by having good knowledge on electronic services and awareness on their advantageous, it can reduce resistance

toward technologies. For these reasons, the result as shown in Table 4.4, 56% the percentage of confirmation from the experts that users' computer efficacy to be one of the CSFs that should be taken into account in implementing successful e-government initiative in Jordan.

4.8.6 **Change Management**

E-government projects have provided great opportunities for Jordanian citizens and government agencies to actively participate in the global knowledge-based economy. However, rapid changes in government departments have been identified in this study as one of the major reasons for the failure of the e-government's implementation. The failure mainly happened due to the lack of consistency at senior management level which later led to contradict decisions, diversity in planning and instability in the implementing e-government plans. As a result, these improper and inefficient decisions making may jeopardize the initial plans of e-government initiatives. Most of these changes mainly happened due to different interest among senior management and immature administration. Consequently, this phenomenon will lead to inconsistent in e-government progress roadmap. Moreover, large amount of money is wasted since the milestone of the e-government initiative has been altered. This eventually will hinder the future plans of e-government initiatives. Interestingly, the researchers claim that the main reason for high failure rate is a poor and improper change at management level.

Based on this result, the roles of a new management in government department should be controlled in order for more consistent decisions to be made. This will also

help the organization to manage their long-terms plans. Furthermore, by having a steady and stable management, one can plan to educate the staff in order to ensure their commitment and persistence in implementing e-government initiatives. In addition, the plans have been outlined earlier can be executed with less modification to meet the desire goals. As a result, less delay in the development of e-government initiative can be expected. Development will definitely help in achieving and providing better electronic services to citizens.

4.8.7 **Resistance to Change**

Resistance to change is another important factor in the development of e-government initiatives since the acceptance from users to use the implementation of e-government. Even though, the development of e-government initiative has received reasonable funding and facilities, the reluctance of users to apply this new technology may jeopardize the whole implementation process and could eventually hinder the implementation process. This could finally cause failures and severe lost to e-government initiates. The finding from Table 4.4 has shown that about five out of nine experts has recommended that their reluctant to change is a CSF in e-government's implementation and should be handled wisely.

Generally, resistance to change happens among staff and senior managers. Some staff of the old generation finds it difficult to cope and handle new jargons and new technological tools. As a result, they refuse to cooperate and participate in the implementation of e-government services. Furthermore, most of these managers are quite comfortable with traditional ways and believe there is no need to change since

they can execute work well. Consequently, shifting from a norm or traditional way to digitized services has brought great difficulties in implementing e-government initiatives.

The results from experts also has indicated that reluctance and objection from citizens and staffs mainly due to the lack of awareness on the benefits of e-government services. As a result, this has created uncertainties and hesitations among users to apply e-government services. Most of Jordanians will tend to neglect the electronic services due to the lack of knowledge on its advantages and benefits of e-government initiatives. Moreover, low confidence in dealing with latest technologies and lack of knowledge on IT-related domain have significant affected the acceptance of e-government services. Eventually, this will create conflicts among staff and this could also jeopardize e-government's implementation process. Thus, a proper training is required to educate the staff on the advantages of electronic transactions so they can operate e-government implementation effectively.

4.9 Ali, Syazwan & Ruzaini's Four Stage E-government Implementation Model

Based on the analysis of the popular e-government's implementation models in section 2.4 (page: 28) and the CSFs was determine in section 4.8 (page: 203). New e-government implementation model (Ali, Syazwan &Rozaini's model) was developed for Jordan as a one from developing countries. Ali, Syazwan &Rozaini's model cover all of the above mentioned CSFs also the better visions of e-government models outlined in literature. Ali, Syazwan &Rozaini's model is based on both technological and public perspective. In addition focuses on the citizen's perspective.

Ali, Syazwan & Rozaini's model has four stages namely: (1) Emerging and Information Dissemination, (2) Two Way Communication, (3) Integration and (4) E-democracy. Each stage include of four different components: Communication, People, Service and Technology. The first component is the communications, in which focuses on the contacts and the exchange the information and services between government agencies and service recipients. The second component is the people, in which focuses on what are the procedures provided to the citizens for accept and activate the e-government initiative. The third component is the service, in which focuses on the type and the level of services provided to the citizen and the service recipients. The last component is technology; this aspect of physical infrastructure contains the technical implementation of the IT components, such as network, information exchange format, equipment data standardization, tools, etc. Figure 4.8 shows the detail description on the new proposed model (Ali, Syazwan & Rozaini's model) discussed as follows:

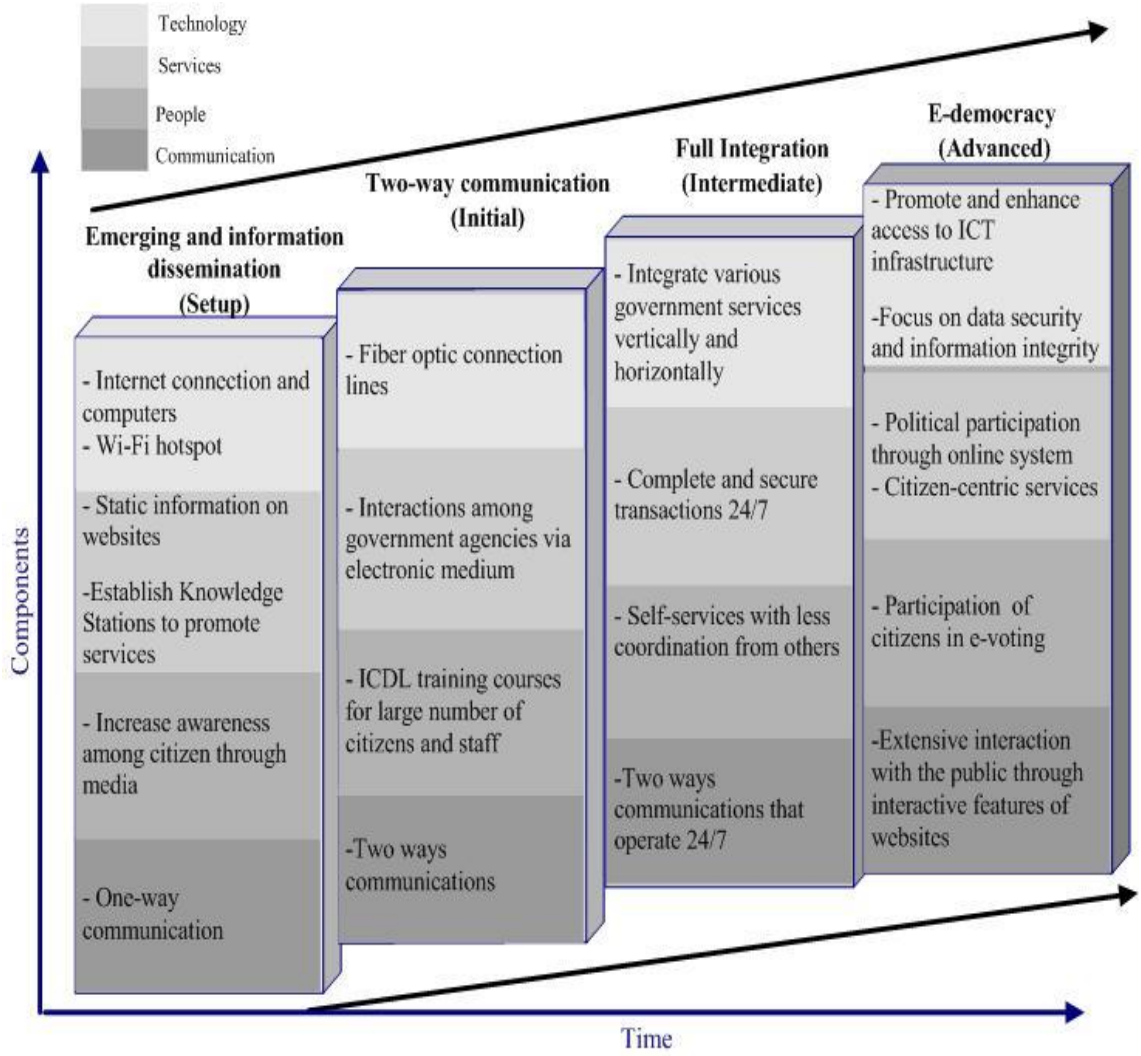


Figure 4.8. Ali, Syazwan & Ruzaini's Four Stages Model (2014)

1) **Emerging and Information Dissemination (Setup):** The emerging and information stage is the low level of proposed e-government model. At this stage, the governments provides basic means of communication and establish e-government websites to disseminate information, public policies, laws and regulations, reports, newsletters, and downloadable forms. In addition, training courses are significantly important to educate and allow citizens to engage with e-government services via internet and email. Several service centers, known as

Telecenter or Knowledge Stations could be established in rural areas. The key aim of this activity is to provide modern means of communication and assists the citizens in using e-government services. Besides addressing old citizens through acceptance program via electronic media, the government also may work along with school and university authorities to emphasize the benefits of e-government services among youths. Such activities are particularly helpful in boosting awareness among Generation Young.

A good internet connection, availability of computers and smart phones has definitely simplified the process of accessing e-government services. The increasing accessibility of public Wi-Fi hotspot that can be found in coffee shops, restaurants and library will certainly help in delivering e-government services. Therefore the IT infrastructure has to be built to facilitate the e-government initiatives at this point. The main difference between this stage and other higher stages is that at this stage the governments provide static information on the websites and no interaction between government and citizens is occur. In addition, this stage only highlights and focus on creating awareness among citizens, provide training courses, and increase the availability of IT infrastructure. These components are important to serve as a foundation for later stages. The concept of this stage is based on the UN's Five-Stage Model (2001), Asia Pacific's Six Stage Model(2004) and UK's Five Stage Model (2001).

2) **Two-way Communication (Initial):** Unlike the first stage, the interaction at the second stage takes place at a more sophisticated level. This stage allows two-way

interaction between the citizens and government in order to obtain answers for their queries. Government officials can be contacted via email, telephone or smart phone. Users (including customers and business operators) can request benefit statements or ask questions and receive responses by mail or telephone. In addition, the user can also make suggestions or submit complaints about government services. Such communication facilities will help government to improve their services.

As for service component in this stage, the users can conduct complete simple online transaction besides being able to receive feedback from government agencies. Dynamic websites that include audio and video capabilities could be used for communicating relevant public information and provide basic search facilities on the websites. Moreover, International Computer Driving License (ICDL) program is offers to large number of staffs and citizen. This is global program aiming at raising the general level of IT competence among the society and ultimately promoting life-long of e-government.

Furthermore, advance Internet connection lines for example fiber optic infrastructure can be set up to transfer the governments' information at high-speed. Such development could allow e-government services to be access easily and minimize traffic interruption. Smart phones applications could also be another strategy to disseminate public services at anywhere and anytime. This is approach is the extension of e-government to mobile platforms, known as M-government. Besides that, centralized database is another core component for

successful implementation of e-government system. In centralized database system the database system, application programs, and user-interface all are executed on a single system and dummy terminals are connected to it. It offers several advantages in comparison to distributed database which include the reliability and robustness of information, confidentiality of information, data integrity and consistencies and ease of administration management. Data security can also be increased since the data is stored centrally and enforcing security constraints is much easier. Different from first stage, this stage focuses on account security, confidentiality in the provision of services, data integrity, technical matters and information accuracy. This stage is based on Hiller & Belanger's Five Stage Model (2001), Deloitte's Six-Stage Model (2001), Asia Pacific's Six Stage Model (2004), UK's Five Stage Model (2001), PPR's Four Stage Model (2006), Accenture's Five- Stage Model (2003), Siau & Long's Five Stage Model (2005) and Watson & Mundy's Three Stage Model (2001).

3) **Full Integration (Intermediate):** This stage enhances the communication interaction by allowing users to submit requests or online applications 24 hours a day and 7 day a week. Users can conduct complete and secure transactions through the website applications or the smart phone applications. This includes options for paying taxes or fees, applying for passports, renewing licenses, obtaining birth certificates and etc. Such open lines of communication offer convenience and easy access to e-government services. Meanwhile, the development of staff skills through advanced training courses, and the provision of modern electronic devices such as smart screen and smart phones are crucial to

enhance staffs' knowledge in handling e-government system. This could lead to self-service practice. Moreover, training courses are important to improve e-government services for better sustainability. In addition, workshops and training courses between government ministries are significant to promote the process of inter-ministerial communication and exchange of information. It is also suggested that the private sector play a key role in strengthening the services of e-government and exchange of experiences for successful e-government initiative.

Furthermore, at this stage, the government may attempts to integrate various government services vertically (i.e. government agencies in different levels) and horizontally (i.e. different departments or governments in different locations). As a result, the government could build a single and unified portal to provide integrated services. This portal also contains links to another government agencies and private sectors sites. Such integrated services could enhance the efficiencies of e-government services and offer personalized services to citizen according to his/her own preferences and needs.

This stage highlights security aspect, data integration, technical matters, information accuracy and political changes. This stage is based on Layne & Lee's Four -Stage Model (2001), Deloitte's Six-Stage Model (2001), Hiller & Belanger's Five Stage Model (2001), PPR's Four Stage Model (2006), Accenture's Five- Stage Model (2003), Watson & Mundy's Three Stage Model (2001) and West's four stage model (2000).

4) **E-democracy (Advanced):** The final stage of proposed model represents a high level of government communication actions, in which the government encourages the citizens to participate in decision-making and political activities such as e-voting, online public forums, polling and surveys and online opinion surveys. Such activities could open opportunities doors for direct and wider interaction with the public through interactive features of websites, smart phone applications, Facebook and twitter. As a result, the e-government is gradually changing the way in which people make political decisions and citizen-centric services can be offered.

In addition, the integrated e-government services can be provided for all citizens anywhere at any time with secure transactions. Citizens and business can access various government services, conduct online transactions, access information and interact with various government bodies at once. The self-service by citizens without reference to the government ministries is established at this point. The citizens can conduct electronic transactions across various applications such as smart phones, kiosk and via the Internet. Moreover, majority of the citizens participate in government political and business decisions through electronic voting and share their opinion on government proposals by public forums, websites and other electronic means.

This stage takes into consideration the security and confidentiality aspects, whereby the privacy of the information is given higher priority. Technical issues such as the development of advance infrastructure play important role in

disseminating e-government services. In addition, the information accuracy and political changes have to be handled wisely. This stage is based on Hiller & Belanger's Five Stage Model (2001), Moon Five Stage (2002) Model, Asia Pacific's Six Stage Model (2004), UK's Five Stage Model (2001), Siau & Long's Five Stage Model (2005) and West's four stage model (2000).

4.10 Discussion and Summary

This chapter discusses the main objective, and the two specific objectives, that are to develop model for e-government implementation in Jordan. Given the main objective of this study, the specific objectives are:

1. To identify the success factors for the implementation of e-government initiatives in Jordan.

2. To verify the identified critical success factors for the implementation of e-government initiatives in Jordan.

The first specific objective presents the qualitative analysis of the data gathered from the interviews conducted involving staff from the Jordanian ministries; second objective determines and verifies the CSFs for successful e-government's implementation in Jordan. Thus the main objective is the development of a model for e-government implementation for Jordan.

The first specific objective for this chapter has achieved its aims of highlighting the technology, organizational and people factors as the main success factors influencing

the implementation of e-government initiatives in Jordan. The findings highlight the importance of many specific factors from three main factors in e-government's implementation and how these factors affect the success and acceleration of the implementation of e-government in Jordan. The Organization factors identified are Vision and Strategy, Top Management Support, Leadership, Funding, Organization Structure, Change Management, Policy and Legal Issues as well as Reward System.

Also, the analysis showed the important role that can be played by Organization factors especially by Leadership and Top Management Support, in the context of a developing country, by using their power to enforce e-government initiatives. Technology factors as the second main factors are Information Technology (IT) Infrastructure, Information Technology (IT) Standards, Collaboration, Security, Flexibility, Quality, Accessibility and User-Friendliness. Based on the opinions of the participants in this research, these factors are deemed to be essential to the success of e-government initiatives in Jordan. Finally, People factors identified are Training, Users' Computer Efficacy, Trust, Awareness and Resistance to Change. The investigation process and analysis of data gathered during this study has also led to the identification of more specific success factors. Ten important success factors in relation to e-government implementations in Jordan were identified: Funding, IT Infrastructure, Policy and Legal Issues, Awareness, Top Management Support (Political Support), Users' Computer Efficacy, Reward System, and Resistance to change, Vision &Strategy and Training. Understanding these factors is critical for the progression of the field in both academia and practice, for example, to understand what drives the success of e-government initiatives. It is vital to form the foundation

for deriving performance measures related to e-government development, and to support the design and deployment of shared service structure and governance. All of these ten aspects are important to be aware of and managed in order to ensure successful e-government initiatives.

The second specific objective for this chapter is validation the CSFs for e-government implementation in Jordan. During the validation process, the Delphi approaches were used to determine the CSFs for e-government implementation in Jordan. The CSFs have been identified and determined by taking the views (results) of nine experts who have held posts as top managers and decision makers related to e-government from the three ministries Jordanian. Three rounds of Delphi Methods were engaged in getting the responses from the experts through email (two times) and interviews (1 time). Based on the validation process by using Delphi approaches seven factors were determined as CSF for e-government implementation in Jordan. These factors are: Top Management Support, Vision & strategy, Funding, (IT) Infrastructure, User Computer Efficacy, Awareness and Resistance to change.

The main objective for this chapter is the development of e-government implementation model for Jordan. Based on the analysis of the popular e-government's implementation models and the CSFs were determined in this study. Ali, Syazwan & Rozaini's model outlined requirements for successful implementation of e-government in Jordan as a one from developing countries. Ali, Syazwan & Rozaini's model has four stages namely: (1) Emerging and Information Dissemination, (2) Two Way Communication, (3) Integration and (4) E-democracy.

Ali, Syazwan & Rozaini's model developed based on the better visions and on the strong points of e-government models outlined in literature, also covers all of the above mentioned CSFs. Seven critical success factors take in account to support Ali, Syazwan & Rozaini's model and to the achieve the successful implementation of the model, the factors are Top Management Support, Vision & strategy, Funding, (IT) Infrastructure, User Computer Efficacy, Awareness and Resistance to change.

CHAPTER FIVE
CONCLUSION AND FUTURE WORKS

5.1 Introduction

The previous four chapters of this thesis have presented thorough discussions to achieve the objectives outlined in Section 1.4. The research involves a series of works such as identifying research problems in e-government implementation, outlining the research objectives, determination systematic research methodology, conducting meticulous data collection analysis, validating and verifying the CSFs for e-government initiatives and develop e-government implementation model for Jordan.

This chapter presents a summary of the entire work in the following sections. The conclusive research summary is discussed in Section 5.2, whereby at this point the whole research work is recapitulated in order to offer detail description of this study. Section 5.3 explains the main contributions of this thesis, while Section 5.4 discusses potential directions of the future works to further improve the CSFs of e-government's implementation in Jordan. This chapter ends by presenting the conclusion remarks.

5.2 Research Summary

Recapitulating the research objectives, which is to develop model for e-government's implementation in Jordan, this research has gone through several research stages namely, Preliminary phase, Theoretical phase, Practical phase and Development

phase to find the answer for defined problem. The summary of this study is described in the following sections.

5.2.1 **Preliminary phase**

Preliminary phase is the first basic stage in any scientific research activity. Accordingly, in this research the previous works have been reviewed depends on the secondary resources through literature review from journals, books, documents, proceeding, and other academic research studies, used in order to gain background knowledge and information related to CSFs in any e-government's implementation. A number of e-government implementation models have also been studies and analyzed to identify the success factors that lead to the successful implementation of e-government initiatives. In addition, this study also has highlighted the challenges that faced by government in dealing with e-government projects. At this stage, the Preliminary phase mainly deals with general success factors through the extensive literature review and the study of popular e-government's implementation models, which mainly serve the purpose of first objective in Section 1.4. The finding and the output from this phase was the collect all previous studies that have related to the e-government implementation in developing countries.

5.2.2 **Theoretical Study**

Theoretical studies have always been an important element in any scientific research activity. Figure 5.1 presents the theoretical study steps of this study.

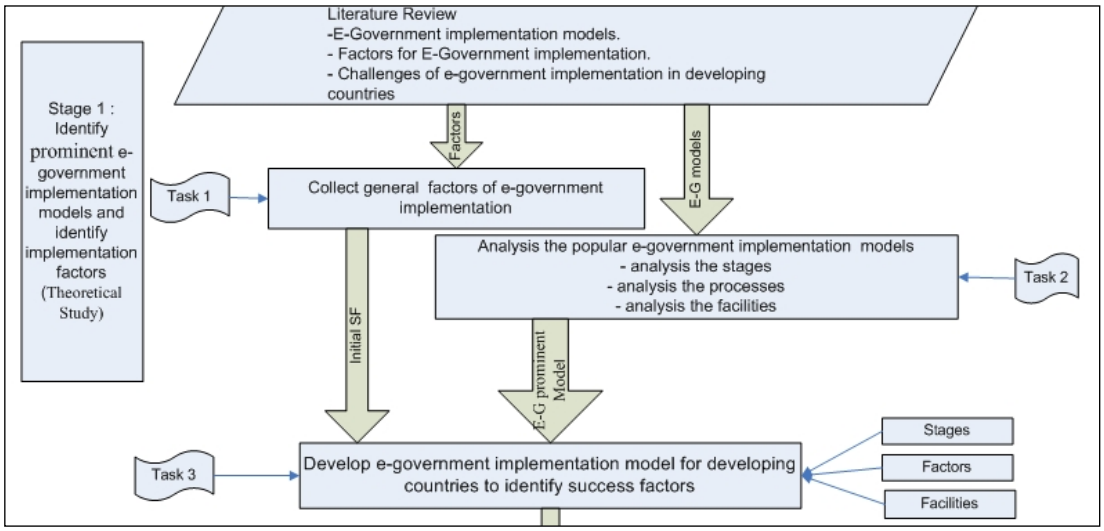


Figure 5.1. Theoretical Steps

Generally, the theoretical study involves three main steps. The first step in this stage is to investigate the current challenges and problems related to e-government implementation especially in developing countries. The research has discovered that many developing countries have found it difficult to deal with various aspects of the e-government implementation plans. In this regard, many e-government projects have encountered different problems, failed to meet their objectives and are not well executed. Hence, a thorough analysis on success factors on e-government initiatives could help the government agencies in making correct decisions and ultimately assist them in implementing successful e-government projects.

In order to identify the CSFs for e-government implementation in developing countries, the second step in theoretical study aims to identify and scrutinized the popular and common e-government's implementation models. At this step, the stages, services and facilities for popular selected models have been analyzed. The

advantages and limitation of the models have also been outlined, along with the services that have been provided to citizens. Moreover, ways to access e-government's services and the characteristics of service delivery channels have been recognized. Furthermore, the success factors from the stages, services and facilities for the e-government implementation models have been determined.

Identification of possible success factors from the literature review as well as from the analysis of e-government's implementation models led to identified the CSFs that used for development of a e-government implementation model for Jordan which served the purposed of third step in theoretical study. Several general success factors, approximately about twenty two factors, have been discovered in this study. The new conceptual model is then considered as a baseline to determine the CSFs for develop e-government implementation model for Jordan.

5.2.3 **Practical Phase**

The Practical phase on the other hands has two main objectives determine and identify the initial success factors and validation the CSFs for e-government's implementation in Jordan. The first main objective is aims to determine and identify the initial success factors for e-government's implementation in Jordan. Therefore, besides collecting and identifying the general success factors from the literature review and popular e-government implementation model, this study also has taken into account the different perspectives of professionals regarding the factors that may contribute to successful implementation of e-government initiatives. Research data was collected by interviewing thirty respondents from different Jordanian ministries

who are involved in e-government projects. These respondents mainly are managers, general managers and decision makers. Semi-structured interview approach has been used to interview these respondents, who are from three Jordanian ministries (1) MoICT, (2) Ministry of Education and (3) Ministry of Labour. In this Empirical Study stage, the potential success factors have been obtained from the respondents in order to identify and obtain the initial success factors for e-government's implementation in Jordan. This study has analyzed the interview transcripts by using Nvivo and its analysis functions. Figure 5.2 presents the steps involved in the Empirical Study.

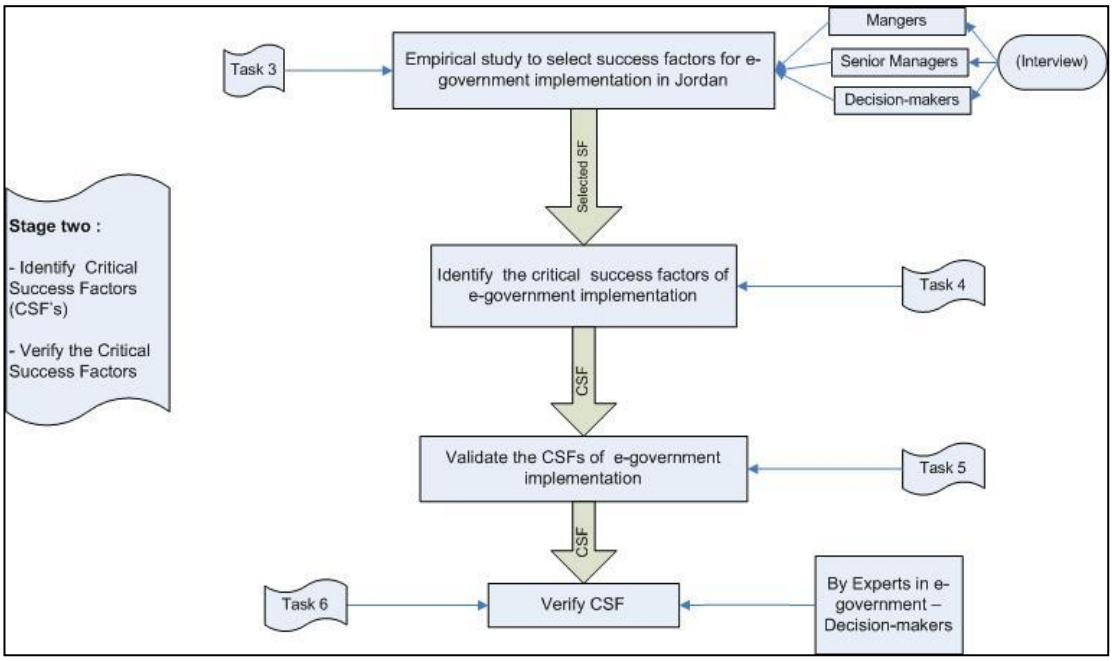


Figure 5.2. Practical Steps

The second main objective on this phase is aims to determine the CSFs for e-government's implementation in Jordan. Therefore, the validation process is carried out through the experts' panel. The Delphi Technique has been used to determine the

CSFs by going through three rounds. Nine experts from three Jordanian Ministries (MOICT, Ministry of Education and Ministry of Labour) are involved in this study. In the first round, the experts were connected through emails, where they were given an opportunity to study the factors carefully and determine the degree of importance of each factor on the success of e-government. The output produced is then used as input in the second round.

The second round on the other hand involved semi-structured interviews (face-to-face). the objective of this round is to identify CSFs and the importance of each factor and how each factor affects on the success and the development of e- government's initiatives. This approach also allows for focused, conversational, two-way communication. Like the first round, the output of the second round is used in the third round.

In the third round, the data collected from the second round were analyzed. From all the answers transcript of the experts, the final draft of CSFs has been generated. In order to validate the findings, the results were once again circulated among experts by email. Lastly, the final CSFs for e-government's implementation in Jordan have been derived as the experts have verified the CSFs.

5.2.4 **Development phase**

The final stage of the research is the Development phase. The aim of this phase is to achieve the objective of this research is to develop model for e-government

implementation in Jordan as a one from developing countries. Figure 5.3 presents the Development phase steps of this study.

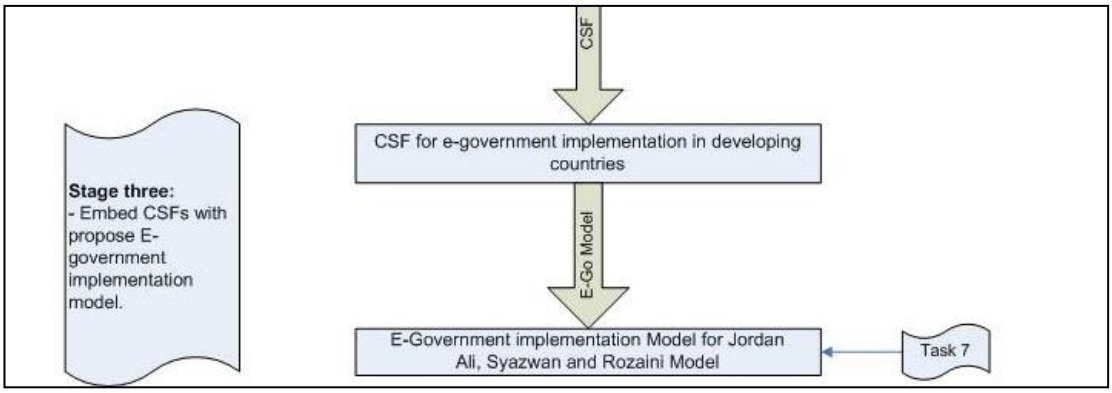


Figure 5.3. Development phase

New e-government implementation model Ali, Syazwan &Rozaini's model was developed to be implemented in Jordan, the output of this phase is the main contribution for this study. This phase was performed through two parts. The first part identifies and analysis the popular e-government implementation models to develop e-government implementation model for Jordan. The second part, embed the CSFs the output of third phase (Practical phase) with the propose e-government implementation model.

The output from this phase was the development e-government implementation model for Jordan. The develop e-government implementation model the objective of this study and also the main research contribution.

5.3 Research Contributions

Four main stages have been conducted in order to determine the CSFs to develop e-government implementation model for Jordan. In doing so, this research has achieved several implications on theory and practice related to e-government in implementing e-government's initiatives. The contribution of this study can be divided into two main categories which are; a) contribution to the practical and b) contribution to the literature.

The contribution of the practical is the determination of CSFs of e-government's implementation in Jordan for developing e-government implementation model for Jordan, which could lead to better implementation of e-government project, while the contribution of the literature emphasize on the implication of this study on body of knowledge. Section 5.3.1 and 5.3.2 elaborate on practical contribution which Section 5.3.3 present the theoretical contribution.

5.3.1 **Conceptual Model for E–government Implementation**

This study contributes to the area of literature by proposing new model and offering deeper understanding on the existing knowledge. The theoretical phase has discovered the twenty two factors from common success factors for e-government implementation and analyzed popular models for e-government implementation in developing countries. Based on the output of the theoretical phase as the input practical phase, seven main critical success factors was determine and identify the initial success factors and validation the CSFs for e-government's implementation in Jordan are the practical findings. from the output of the theoretical phase and

practical phase the CSFs was embed with the propose the new e-government implementation model Ali, Syazwan & Rozaini's model for e-government implementation has been develop in this research. The model has four stages: (1) Emerging and Information Dissemination; (2) Two-Way Communication; (3) Integration and (4) E-democracy. This new model could facilitate in implementing fully electronic services in the government agencies of developing countries to disseminate information effectively and increase the transparency of decision making process.

5.3.2 **Critical Success Factors for E-government Implementation in Jordan**

The practical contribution also of this study is the CSFs for e-government implementation in Jordan. Several factors have been identified in this work based on the Preliminary, Theoretical and Practical phase which also takes into account the difference perspective of experts' views such as managers, senior manager and decision-makers on CSFs of e-government implementation. From the nine experts of three Jordanian ministries, seven factors have been determined as CSFs for e-government' implementation in Jordan, namely: (1) Top Management Support; (2) Vision and Strategy; (3) Findings; (4) IT Infrastructures; (5) User Computer Efficacy (6) Change Management and (7) Resistance to Change. These factors could assist the government agencies to formulate systematic strategies in implementing a successful e-government project that are beneficial and efficient for users and other organizations. Moreover, by considering these CSFs, the government agencies could

retain long-term sustainability, which ultimately helps in improving socio-economic conditions of people in developing countries.

5.3.3 **Merging Practical Findings with Experts' View**

Besides relying on the Practical phase, this study has determined the initial CSFs for e-government implementation in Jordan by taking into consideration the different views of expert panels. The initial CSFs for e-government implementation have been mainly derived from the perspectives of the managers, senior managers and decision-makers who are working at different Jordan ministries. Understanding and meticulous analysis on these factors is critical for the progression of the field in both academia and practice. Hence, it is very important to incorporate the different view of experts since they are involved in implementing e-government initiatives for many years. The experience and knowledge of experts are valuable and significant in providing additional input to determine the CSFs that influence the success of e-government initiatives and develop e-government implementation model for Jordan as a main contribution for this study.

5.4 Limitations of the Research

The empirical evaluation throughout this research has discovered seven CSFs and identified the most popular e-government implementation models that contribute to the develop e-government implementation model for Jordan to successful implementation of e-government in Jordan.

This model is substantial in proposing proper e-government initiatives toward establishing citizen-centric services. However, there are a few limitations in this research which are discussed in this section in developing e-government implementation model and determining the CSFs for e-government implementation, this thesis only focused on Jordan as one of the selected developing countries. Therefore, the empirical results of this work required further analysis and exploration in order to be generalized in other developing countries. This is mainly due to the unique characteristic of the developing countries in implementing e-government initiatives.

In addition, this study only includes public sector for Jordan three ministries namely (1) The MoICT, (2) The Ministry of Education and (3) The Ministry of Labour in the search to develop e-government implementation model and CSFs for e-government implementation in Jordan. Therefore, in the future it is expected other government agencies and private sectors can be incorporated to verify the obtained results.

This study also has focused on three different perspectives of experts, who are general managers, senior managers and decision makers. These groups of experts have been selected based on their involvement and role in implementing e-government initiatives. However, the potential plan in near-time could be to include more experts' view and participation of the private sector in Jordan in developing e-government implementation model for Jordan and identifying the CSFs that lead the successful implementation of e-government in this Jordan.

5.5 Recommendations for Future Work

Development phase has been conducted in order to develop e-government implementation model for Jordan based on Empirical phase to determine the CSFs for e-government implementation in Jordan to embed the CSFs with the new e-government implementation model for Jordan. There are many new ideas that could be introduced to extend this research. The most pressing ideas for future research are listed as follows:

1. Empirical research on e-government in Jordan is still far behind. There has not been much research conducted on e-government implementation models for Jordan that can offer light on the ways that contribute to successful implementation of e-government in Jordan. Thus, it is anticipated that this study could provide initial empirical data as the foundation for further research efforts to explore the correlation of implementation models that can lead to the improvement of e-government initiatives in Jordan.

2. The study has contributed to the design and development of Ali, Syazwan &Rozaini e-government model based on the most popular e-government implementation models. However, this model requires further testing and evaluation mainly on its effectiveness and efficiency in implementing e-government initiatives in Jordan and other developing countries that have similar situation.

3. Empirical research on e-government in Jordan is still far behind. There has not been much research conducted on CSFs that can offer light on the factors that contribute to successful implementation of e-government in Jordan. Thus, it is anticipated that this study could provide foundation for further research efforts to explore the correlation of success factors that can lead to the improvement of e-government initiatives in Jordan.

4. This study only addressed the three Jordanian ministries as a Jordanian public sector in seeking for develop e-government implementation model for Jordan. Therefore, future research could verify the research findings (develop e-government implementation model) by expanding the study area to include all Jordanian government and private sectors as a strategic partner in the implementation of e-government in Jordan.

5. This study only addressed three Jordanian ministries in seeking for CSFs for e-government implementation in Jordan. Therefore, future research could verify the research findings (discovered CSFs) by expanding the study area to include all Jordanian government and private sectors. The study also may look into other factors that inspire and suppress the successful implementation of e-government in Jordan.

6. Besides relying on theoretical study, this study only include the perspectives and responses of general managers, senior managers and decision makers in determining the CSFs to develop e-government implementation model for

Jordan. Hence, it is proposed that the future works could consider more experts' view in identifying the CSFs that enhance or hinder the successful implementation of e-government to embed it with the new e-government implementation model for Jordan.

7. The methodology used in this research could also be applied to identify CSFs for e-government implementation in other countries to develop e-government implementation model. In doing so, it may increase the availability of data for future comparisons on the different CSFs. In addition, the relevance and adaptability of CSFs in other developing countries can be verified.

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