Managing e-Government Projects: The Gap between Supply and Demand

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Declaration

I declare that the work in this dissertation was carried out in accordance with the regulations of the University of Bristol. The work is original, except where indicated by special reference in the text, and no part of the dissertation has been submitted for any other academic award. Any views expressed in the dissertation are those of the author.

SIGNED: ..... DATE: 10/4/2008"

Acknowledgements

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Abstract

National governments around the world are witnessing a new revolution in their public sector management brought about by their deployment of e-Government initiatives. The term e-Government generally refers to the implementation of information and communications technology to change the structures and processes of government organisation so that it has the potential to achieve better performance and provide better services for citizens and responding to their growing demand for online needs. e-Government as a topic is described by academics as being a new and dynamic with a multidisciplinary research domain. This has led to an increase in its complexity resulting in e-Government not being well defined. This has affected the research work of theory building and model constructing which present and describe e-Government. Researchers reviewing e-Government literature and models describe it as "resembling random rocks being thrown into a pool". Therefore the first step in this research will be to present a theoretical background of the topic by constructing generic e-Government model that identifies the key requirements needed for effective implementation and management of e-Government projects. This will create a comprehensive understanding of e-Government setting the required platform to investigate this research problem which is the existing gap between supply and demand.

The supply of e-Government and how they are responding to citizens' needs is relatively unexplored area of e-Government research. Practically, there is a lack of studies reviewing the development and effectiveness of e-Government in developing countries. The demand side of e-Government in Jordan is examined using a number of hypotheses to study citizens' intended interaction level with e-Government services and to understand the factors that would increase this demand. To test the proposed hypotheses on the demand side, data has been collected using quantitative questionnaire. The results indicated that people in Jordan have a low level of demand (mainly informative) on online services. Moreover, if people have more trust in the Internet, trust in government, compatibility with online services and better access to ICT, they would demand higher levels of online government services.

The supply side of e-Government in Jordan has been examined in two stages. Firstly, government intended level of e-Government supply, how successful e-Government was in achieving its goals, and the citizens' position within government strategy has been explored using Document Analysis. Secondly, the actual e-Government service delivery and how responsive it was to citizens' demands and needs has been examined using Website Content Analysis. Results related to the supply side of e-Government indicated that the Jordanian Government has been striving to achieve advanced levels of e-Government services. Nonetheless, the government is currently delivering basic informative services, which were developed in a way that ignores peoples' needs and requirements leading to the creation of a weak online presence for the Jordanian Government. The research findings indicate that there is an evident gap between the government and citizens' perspectives on e-Government. Also, the research highlights key problems regarding the Jordanian government implementation and management of e-Government initiatives. It is concluded that unless the Jordanian government modifies its e-Government strategy in a way that reflects people's needs and the actual capabilities of the country, it will continue struggling to achieve any credible outputs.

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List of Acronyms

AMIR: Achievement of Market Friendly Initiatives and Results Programme
AT: Austria
B2B: Business-to-Business
B2C: Business-to-Consumer
BE: Belgium
C2C: Customer-to-Customer
CRM: Customer Relationship Management
CSCP: Civil Service Computerisation Programmes
CzRM: Citizen Relationship Management
DE: Germany
DK: Denmark
DLS: Department of Land and Survey
DOI: Diffusion of Innovation Theory
DTI: The UK Department of Trade and Industry
DVLD: Drivers and Vehicles Licensing Department
EAI: Enterprise Application Integration
EC: Electronic Commerce
EDI: Electronic Data Interchange
EL: Greece
ES: Spain
e- Citizen: Electronic Citizen
e- Democracy: Electronic Democracy
e- Government: Electronic Government
e- Hype: Electronic Hype
e- Initiatives: Electronic Initiatives
e- Readiness: Electronic Readiness
e- Services: Electronic Services
e- Society: Electronic Society
e- Transformation: Electronic Transformation
ECDL: European Computer Driving License
EU: European Union
FI: Finland
G2B: Government-to-Business
G2C: Government-to-Consumer
G2G: Government-to-Government
GDP: Gross Domestic Product
GOL: Government on Line
ICDL: International Computer Driving Licence
ICT: Information and Communication Technology
IDAs: International Development Institutions
IE: Ireland
IS: Information Systems
ISTD: Income and Sales Tax Department
IT: Information Technology
IU: Intention to Use
JD: Jordanian Dinar
JT: Jordan Telecom

LDC: Less Developed Countries
LU: Luxembourg
MoF: Ministry of Finance
MoI: Ministry of Interior
MoICT: Ministry of Information and Communication Technologies
MoP: Ministry of Planning
NIS: National Information System
NITC: National Information Technology Center
NL: Netherlands
NPM: New Public Management
NPR: National Performance Review
OECD: Organisation for Economic Co-operation and Development
OLPC: One Laptop Per Child
PC: Personal Computer
PCI: Perceived Characteristics of Innovating
PEOU: Perceived ease of Use
PEST: Political, Economic, Social and Technological Analysis
PESTEL: Political, Economic, Social, Technological, Environmental and Legal Analysis
POST: Parliamentary Office of Science and Technology
PT: Portugal
PU: Perceived usefulness
REACH: Regulatory Framework; Estate; Advancement Programmes; Capital; Human Resources Development
SE: Sweden
SWOT: Strengths, Weaknesses, Opportunities and Threats Analysis
TAM: Technology Acceptance Model
TQM: Total Quality Management
UI: Usability Index
UK: United Kingdom
UN: United Nations
UN/ASPA: United Nations Division of Public Economics and Public Administration and the American Society for Public Administration
UNDP: United Nations Development Programme
UNECE: United Nations Economic Commission for Europe
UNPAN: United Nations Department of Economic and Social Affairs Division for Public Administration and Development Management
USAID: United States Agency for International Development
VIF: Variance Inflation Factors

Chapter 1

Research Introduction

1.1 Introduction

The aim of this chapter is to set out the purpose of the research, describe the data collection methods that have been implemented to satisfy the research questions and explain the research structure, finally highlighting the importance of the study.

Background: Information and Communication Technologies (ICT) are the technologies such as computers, software, peripherals and Internet connections infrastructure required to support information processing in order to execute applications and deliver services (Leahy & Yermis, 2003; Raji & Ayoade 2006). Sesan (2001) defines ICT as the convergence of micro electronics, computing and telecommunications which has become a global phenomenon of great importance and concern in all spheres of human endeavour, spanning across education, governance, business, labour, productivity, culture, trade, commerce and others (Raji & Ayoade, 2006). During the last decade a revolution in ICT has been witnessed. This revolution is not only changing the daily life of people but also changing characteristics of the interaction between governments and their citizens (Wong & Welch, 2004). These changes, in turn, are quickly being transformed into a new form of government, namely, electronic government (e-Government) (Akman et al., 2005).

For a range of motives, national governments all around the world are increasingly launching their e-Government initiatives in what is called e-Government drivers. e-Government as a term refers to links and processes that by using modern network communication and computer based technology, the government simplifies, optimizes, recombines and integrates governmental functions and services and then operates them on the network. This can remove the limitation of temporal, spatial and organizational separation and raise governmental efficiency by offering an efficient, excellent and uncorrupted service. e-Government users and the public sector will achieve financial and process benefits by having easier faster and more transparent

services (Peng & Chen, 2005; Norris & Moon., 2005). The USA, some European countries and Australia together with other developed countries who were involved in the New Public Management[1] (NPM) have been the early adopters of e-Government programmes (Teicher et al., 2002; Leitner 2003; Saxena, 2005).

By the start of the current millennium most of the governments around the world had followed the steps of the world's leading countries and started the implementation of major ICT programmes such as e-Government. The United Nations (UN) Report 'Benchmarking e-Government: A Global Perspective' UN/ASPA (2002) which presented a global review on e-Government during 2001, concluded that out of 190 UN member states, 88.9% of their national governments use the Internet in some capacity to deliver information and services for citizens and businesses. More recently The UN 'Global e-Government Readiness Survey' UNPAN (2005) assessed more than 50,000 features of e-Government websites being used by the 191 UN member states in order to consider the development of their e-Government Projects. Countries' investment in information technology (IT) based projects is becoming a major part of their budget expenditure. It is reported that the USA dedicated 13% (around US $ 52bn) of its country's budget for IT spending compared with 3% for India and 2.4% for the UK in the year 2002-2003 (Wagner et al., 2003). More recent estimates indicate that e-Government specifically is becoming a very big business in the twenty-first century, amounting to over 1% of GDP in most industrialised nations and around US $28bn annually in the United Kingdom (Margetts, 2006).

Such huge investments are not a surprise since ICT has been identified to play an important role in trade facilitation (McMaster & Nowak, 2006). It is suggested that adopting ICT would help countries in reducing the complexity of international trade and minimising the transaction costs. P articipants in international trade can save billions of dollars each year and benefit from an increased security and transparency in supply chains (UNECE, 2006). There have been several researches linking economic growth with ICT adoption (Dedrick et al., 2003). As a result governments, business and people around the world have started appreciating the ability of ICT to

[1] New Public Management (NPM): Is a management philosophy used by governments since the late 1980s to modernise the Public Sector. Based on public choice and managerial schools of thought new public management seeks to enhance the efficiency of the public sector and the control that government has over it.

stimulate swift development in all sectors of the economy (Nanthikesan, 2000). ICT experts point to increased participation in governance, capacity construction, e-Learning, e-Government, environmental management, enhancing advocacy programmes and empowerment of communities and persons as results of appropriate use of ICT (Chandrasekhar & Ghosh, 2001; Cecchini & Scott, 2003, Kanungo, 2004; Raji., & Ayoade, 2006).

Despite the global boom in governments investing in ICT initiatives and promising to achieve social and economic development, the opportunities for the success of these initiatives in developing countries has been largely unexploited (Ndou, 2004; POST, 2006). However, it is broadly agreed that ICT can play a part in bridging the developmental gap between countries (POST, 2006). Scholars suggest that the introduction of ICT in developing countries will lead to a rapid increase in wealth as well as an improvement in social and personal welfare (Kodakanchi & Kuofie, 2006). They argue that it should be treated as an issue of urgency, since the delay puts developing countries at risk of being further marginalised (Basu, 2004). Others question the relevance of spending development aid on improving access to ICT. However, it is increasingly acknowledged that the two approaches are linked, since ICT can improve access to basic services, such as health and education (POST, 2006). Experiences in Brazil, India, Chile, etc. show that governments in the developing world can effectively exploit and appropriate the benefits of ICT (Ndou, 2004). On the other hand Heeks & Bailur (2006), when investigating e-Government research were surprised to find that optimistic approaches mentioning the benefits of e-Government projects are guidance for most of the conducted studies.

Heeks (2002; 2003) had previously indicated that in developing/transitional countries, 35% of Information Systems (IS) based projects are total failures, 50% are partial failures and only 15% are successes. Ciborra (2005), using a subjective ontology, suggested that the motives which are often given as reasons for the adoption of e-Government in developing countries are highly questionable. This is because a high percentage of e-Initiatives[2] such as e-Government fail to deliver any of their promised outputs. Instead large ICT initiatives in the developing world contribute to developing

[2]Electronic Initiatives (e- Initiatives): Is a term used in IT and development literature that referees to major ICT projects carried out by countries.

a global network that its benefits may not advantage the developing world (Ciborra & Nevarra, 2005). The wide spread of e-Government around the world has recently attracted the interest of academic research in addition to understanding e-Government development and exploring variables that affect e-Government development have become important research topics (Siau & Long, 2006). Chen et al., (2005) state that "e-Government has become an evolving and important research area in the IS field".

1.2 Research Purpose

Citizens have a key position in e-Government deployment and development (Stahl, 2005). This is because e-Government itself has been built on NPM practices, one of whose pillars has been the building of relationships with citizens (Scavo, 2003; Seneviratne, 1999) through what is known as customer relationship management (CRM), CRM is described as being at the heart of NPM (Damodaran et al., 2005). Therefore it is not surprising to find within e-Government literature new managerial concepts, such as Citizen Relationship Management (CzRM), citing the need to primarily focus on citizen satisfaction (Larsen & Milakovich, 2005). An additional driver for e-Government in the developed world has been the growing demand from citizens for online public services (Ho, 2002; Edmiston, 2003; Ho & Ni, 2004). It is important to stress that in the countries where this has occurred the majority of the population have internet access; for instance more than two thirds of the citizens in North America. As a result of this e-Government strategies that have been deployed in many of the developed countries have been constructed to be customer-centred (Ma et al., 2005) Many governments around the world believe that one way to catch up with the developed world is to deploy e-Government projects that are driven by ambitious targets that have been set up in the countries where e-Government is to be deployed (Basu,, 2004). In addition countries have been driven by the electronic hype which has stormed the world since the wide spread of ICT (Zhiyuan, 2002; Dada, 2006).

Many developing countries which are adopting e-Government projects have announced that they will employ customer centric strategies. However this is controversial because the vast majority of the citizens in these countries do not have internet access and do not want online applications (Basu, 2004) which makes observers wonder what is meant by customer-centric strategy: is e-Government being implemented in a way that will respond to citizens' needs, or will its deployment

focus on citizens' IT empowerment so that the citizen will be able to use the promised online services? Numerous e-Government researchers have indicated that governments generally assume that people want e-Government services (Kampen et al., 2005; Welch et al., 2005; Reddick, 2005). In practice governments tend to supply people with what the government thinks is important while neglecting the people's actual needs. Evidence from e-Government research has proved that in a number of societies most users do not require high level integrative services (Thomas & Streib, 2003), most preferring basic informative government services, while other findings suggest that citizens would prefer an improvement in existing public sector services rather than having services delivered online (Kampen et al., 2005). This is creating a mismatch between the supply and demand of e-Government (Sealy, 2003; Reddick, 2004; Tung & Rieck, 2005; Reddick, 2005). Not surprisingly Accenture's, (2005) international e-Government study concludes that "Governments are making service investment decisions without a clear view of the outcomes they effect". The scale of this gap is expected to be much greater within developing countries since the supply-side involves variables, including what is available and the quality and usability of the services (Centeno et al., 2005). These variables are usually of a very low standard in most developing countries (UN/ASPA, 2002; Siau & Long, 2006). As well as this difficulty, most governments in the developing world lack the ability to address the citizen's basic need to connect online in order to utilise government online services (Wei & Zhao, 2005). Because of this many researchers recommend studying the expected gap between various governments and their citizens since, as yet, there is a lack of exploratory studies of this area of e-Government (Lee-Kelley & Kolsaker, 2004; Reddick, 2004; Welch et al., 2005).

One reason contributing to the existence of such a gap according to scholars who studies e-Government development across the globe is that most of the developing countries implementing e-Government projects usually adopt strategies that do not fit those countries' requirements. One reason for this is because e-Government is externally driven by international development initiatives which have a key role in formulating its required outputs without realistically understanding the cultural and social needs of those countries (Stoltzfus, 2005). It is also the case that developing countries are technology driven in their implementation of e-Government and import strategies created for developed countries (Basu, 2004; Chen et al., 2005; 2006). This

practice of importing inappropriate strategies delays the electronic transformation of developing countries by launching projects that are not responsive to either the government's or the people's needs (Pradhan, 2002; Huang et al., 2004; Zhang et al., 2005).

1.3 Research Problem and Goal

e-Government in Jordan is a national programme initiated in September 2000. The Ministry of Information and Communications Technologies (MoICT) renamed in 2003 from Ministry of Post and Communication (MoPC) started the e-Government programme towards achieving the e-Government vision by the year 2005 (MoICT, 2006). The vision was that e-Government would be a contributor to Jordan's economic and social development by providing access to e-Government services and information for everyone in the Kingdom irrespective of location, economic status, IT ability and education. e-Government would represent a major shift in the role of government towards a "client-focused" delivery of services, rather than government being a collector of information solely for its own purposes (MoPC, 2002). The main research problem will be to investigate the "existing gap between supply and demand of e-Government in Jordan". Throughout the investigation the research will also review and summarise the development of Jordan's e-Government programme by highlighting the key strategy practices that have affected the country's transformation and may have caused a gap between e-Government and people, this will also reveal if Jordan has succeeded achieving any social and economic development from e-Government. Figure 1.1 illustrates the gap problem investigated throughout the research.

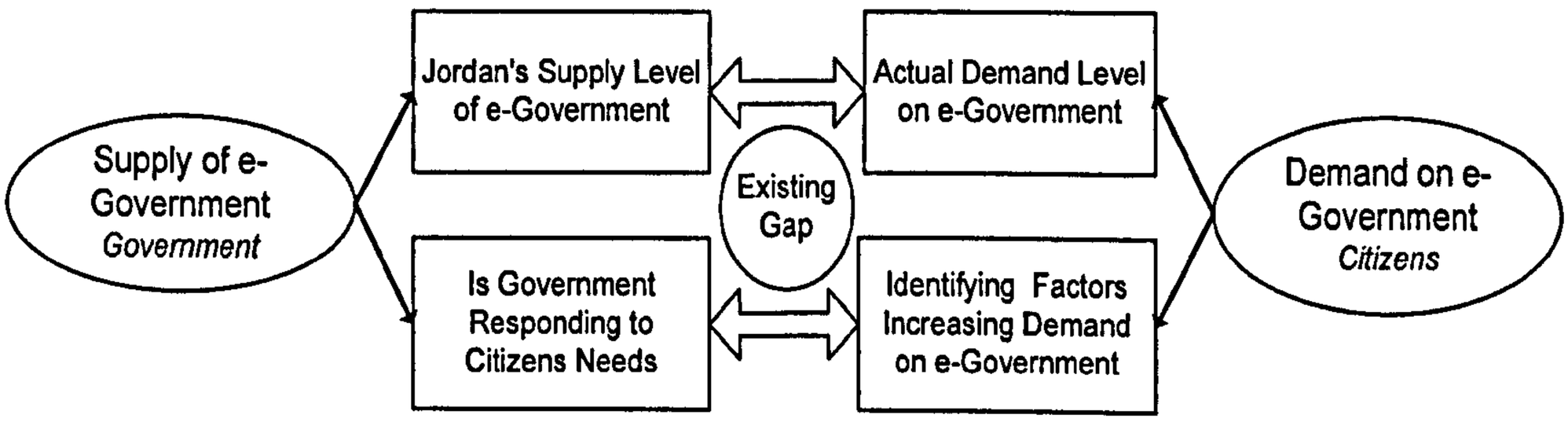

Figure 1.1: The gap between supply and demand

Prior to addressing the research problem a generic e-Government adoption model on a national level will be constructed. This will help the researcher to be comprehensively aware of the e-Government topic, in addition to making it possible for the researcher to recognize causes of problems when analysing data and discussing results. After constructing the generic model, the gap will be investigated and examined. The demand level for e-Government will be identified by implementing the following steps:

- Measuring the level of demand on e-Government services within the electronic society[3] (e-Society).
- Identifying and testing needs that will increase citizens' demand on e-Government.

The supply level of e-Government will be measured through the following steps:

- Identifying the level of services which the e-Government of Jordan is intending to supply to its citizens.
- Measuring what services government is currently supplying to its citizens and how effectively it is achieving its intended goals.
- Assessing the response of government and its services to citizens' demand level and needs.

1.4 Research Methodology

1.4.1 Research Paradigm

The phrase paradigm refers to the development of scientific practice based on people, philosophies and assumptions about the world and the nature of knowledge or in this context, about how research should be performed (Hussey & Hussey, 1997). In order to provide answers and examine the existing gap between supply and demand of e-Government in Jordan, data must be collected from both sides to establish supply and demand (government and citizens). Methods also must be reliable and consistent. Research methodologies are divided into two broad concepts, quantitative and qualitative research. The two methods are a matter of dispute in academia with most arguments preferring one over another depending on the philosophical perspective

[3] Electronic Society (e-Society): Refers to the segment in the society which has the ability to use the Internet, and do use the Internet in a regular basis for different activities these could be social or commercial.

and nature of the intended research (Jick, 1979; Kirk & Mille, 1986; Stoker, 2003; Munck, 2004; Tarrow, 2004).

However, researchers have advised using multi-method approaches when studying a complex emerging phenomenon (Creswell, 2003; Green & Preston, 2005; Sammons et al., 2005). e-Government has the characteristics of being an innovative, complex and not well defined topic (Ndou, 2004; Hackney et al., 2005; Siau & Long, 2005; Ebrahim & Irani, 2005). More recently researchers have specifically recommended the use of multi-method approaches when researching e-Government topics (Heeks & Bailur, 2006; Gil-Garcia & Pardo, 2006). This research has used multi-method approaches combining qualitative and quantitative methods to illustrate findings.

1.4.2 Data Collection Methods

Since the research has been constructed based on a multi-method approach both quantitative and qualitative data collection methods have been used in order to collect primary data. In addition, quantitative and qualitative secondary data as well have been used in the research. Each of the data collection methods used in the research will be discussed in detail in the chapter in which it is being implemented throughout the research. Table 1.1 presents a summary of the main data collection methods used in the research.

Table 1.1: Research method

Data collection method	Purpose for obtaining data	Type of data
Document Analysis	Construct an e-Government Model	Secondary Data 1.Qualitative 2.Quantitative
Semi-Structured interviews *(e-Government Experts)*	Construct and test an e-Government Model	Primary Data Qualitative
Survey questioner *(Internet Users in Jordan)*	1-Measure people's demand on e-Government 2-Test variables increasing people's demand on e-Government	Primary Data Quantitative
Document Analysis	Review Jordan's e-Government goal and progress (review intended delivery & actual supply).	Secondary Data
Website Analysis *(Jordanian Government Websites)*	1-Measure Jordan's actual supply of e-Government 2-Assess Government website and how well is it responding to people's needs.	Primary Data Qualitative / Quantitative
Semi-Structured interviews *(Jordanian public sector IT Mangers and employees)*	1-Discuss and identify different problems related to the deployment of e-Government in Jordan. 2-Discuss different problems related to the existing gap between government and people e-Government in Jordan.	Primary Data Qualitative

1.5 Research Structure

This research is divided into ten chapters. Each chapter contributes to understanding and investigating the research problem. Figure 1.2 clarifies the research structure.

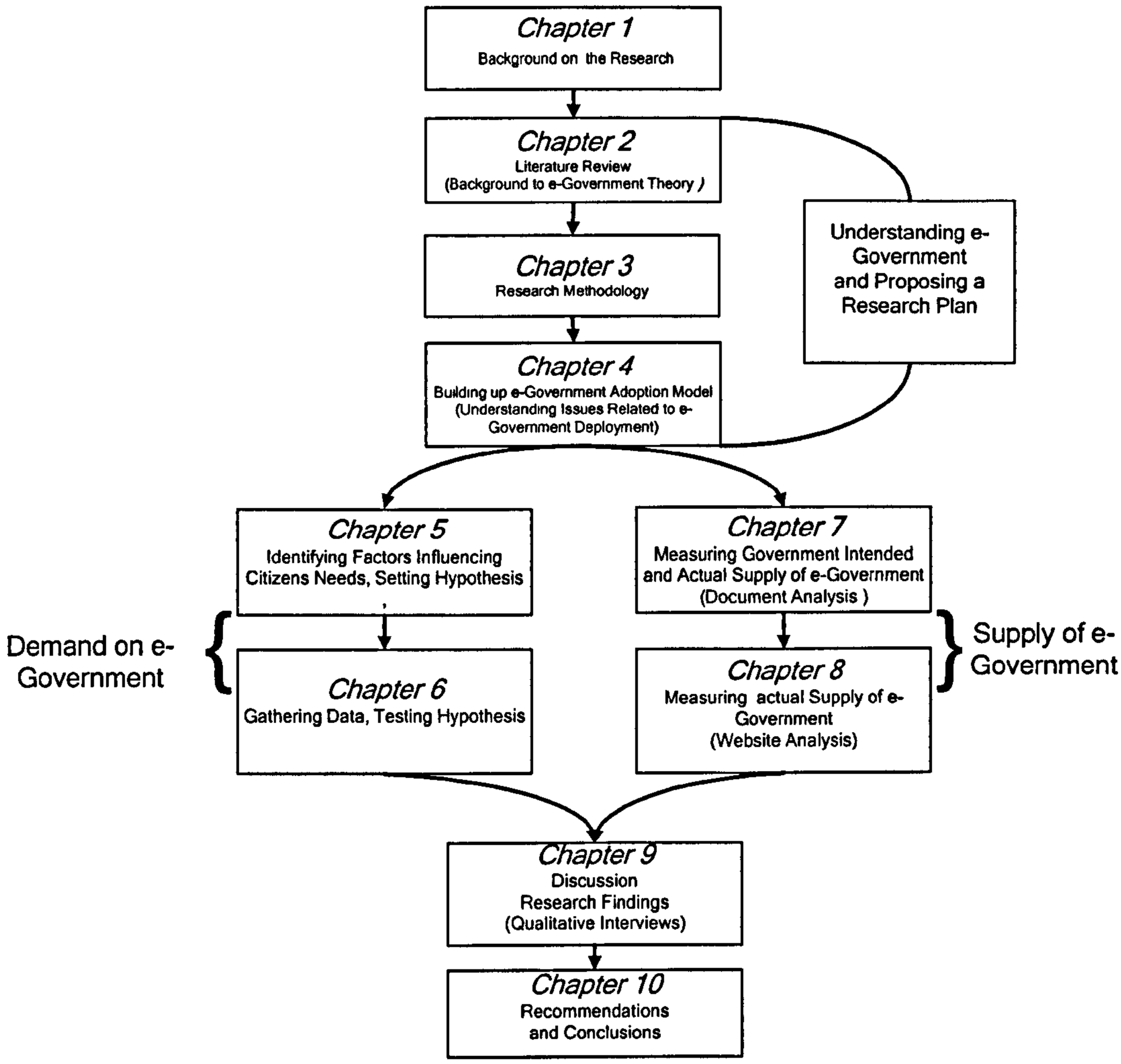

Figure 1.2: Research structure

Chapter 1 Research Introduction: This part presents an overview of the research. It discusses the purpose of the research, identifies the research problems and goals and introduces the research methods that have been used throughout the research, in addition to giving an overview of the research structure. Finally the chapter will discuss the significance of the research.

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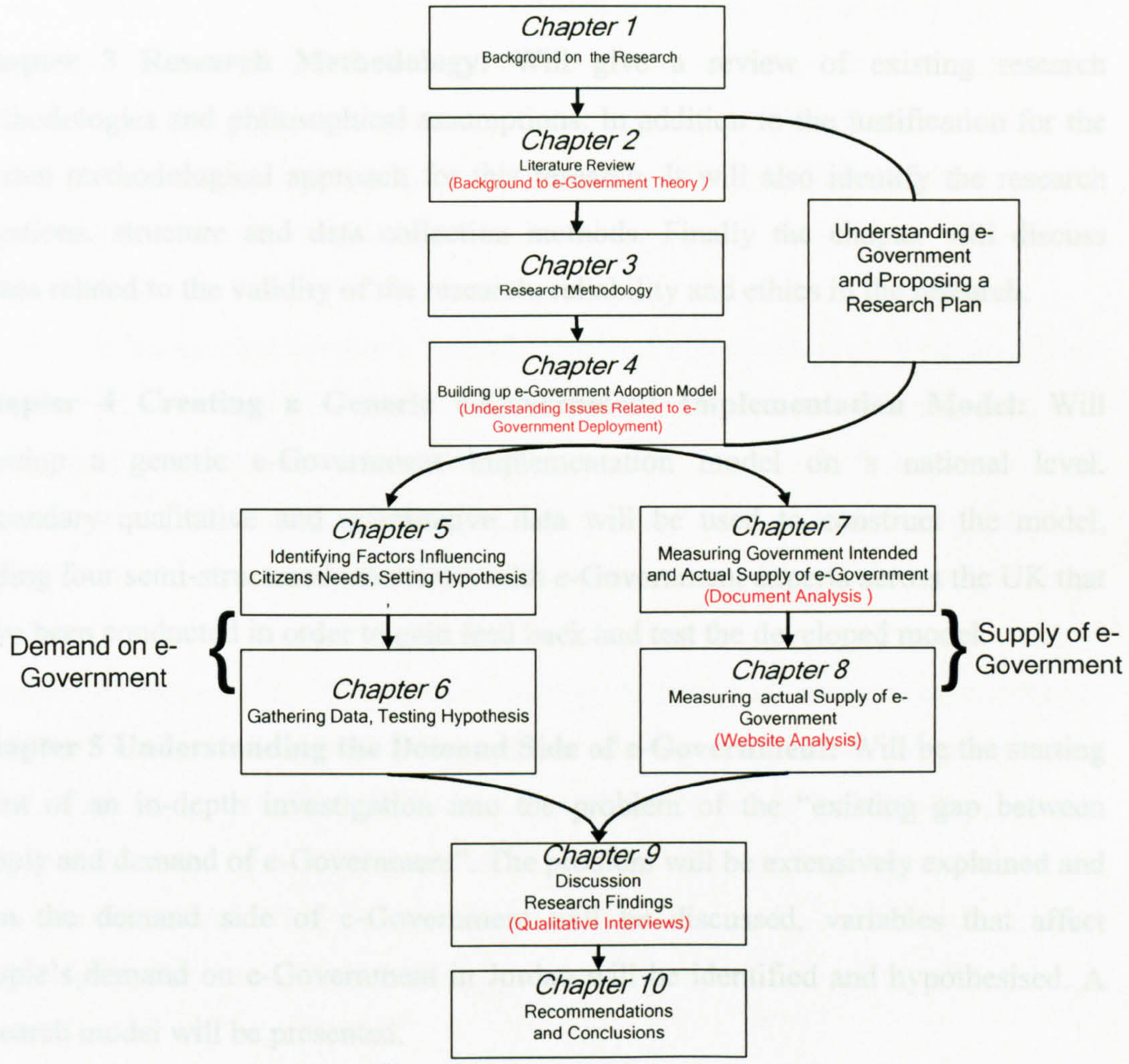

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Chapter 2 Literature Review: Will provide a historical background on the development of e-Government as a topic, offer an insight into e-Government theory including definition, types and benefits of e-Government, its spread world wide and an investigation into why governments around the world are implementing it.

Chapter 3 Research Methodology: Will give a review of existing research methodologies and philosophical assumptions. In addition to the justification for the chosen methodological approach for this research. It will also identify the research questions, structure and data collection methods. Finally the chapter will discuss issues related to the validity of the research, reliability and ethics in the research.

Chapter 4 Creating a Generic e-Government Implementation Model: Will develop a generic e-Government implementation model on a national level. Secondary qualitative and quantitative data will be used to construct the model, adding four semi-structured interviews with e-Government experts across the UK that have been conducted in order to gain feed back and test the developed model.

Chapter 5 Understanding the Demand Side of e-Government: Will be the starting point of an in-depth investigation into the problem of the "existing gap between supply and demand of e-Government". The problem will be extensively explained and then the demand side of e-Government will be discussed, variables that affect people's demand on e-Government in Jordan will be identified and hypothesised. A research model will be presented.

Chapter 6 Data Collection and Analysis: This chapter will identify a quantitative questionnaire survey (online questionnaire) as the most appropriate data collection method in order to test the hypothesis and research model. Using specialist software Excel 2003 along with SPSS V14.0 data collected through a developed questionnaire will be presented. Furthermore the research model and hypothesis will be statistically tested in order to identify the actual demand on e-Government in Jordan as well as finding out people's needs. Statistical tests include normal correlations, mean comparison tests, t-Tests, factor analysis, reliability analysis and multiple regression analysis.

Chapter 7 Examining the Implementation and the Supply of e-Government in Jordan: This chapter will investigate Jordan's intended and actual supply of e-Government in addition to the position of citizens within the Jordanian e-Government by conducting document analysis. The chapter starts with a review of the country of Jordan, followed by a review of the e-Government initiative, where progress and outputs will be discussed. The final part of the chapter will focus on identifying major problems with the implementation of e-Government in Jordan based on document analysis in addition to international and academic publications that have reviewed the implementation of e-Government in Jordan.

Chapter 8: Measuring Jordan's Actual Supply of e-Government: Website content analysis will be used in the chapter to measure the actual delivery of the Jordanian e-Government services for citizens. Website usability analysis will determine if the Government websites are providing people with added value services and information in addition to finding out the level of services that are responsive to citizens' needs.

Chapter 9: Discussion: Will discuss findings of previous chapters, extracting the challenges facing the Jordanian e-Government and exposing the existing gap between the demand and supply side of e-Government. Research results will be discussed with different IT employees and mangers within the Jordanian public sector using qualitative interviews. This will give more validity to founded results and give a better understanding for the researcher about the research problem.

Chapter 10: Recommendation and Conclusions: The final chapter will present recommendations for the Jordanian Government in order to more effectively deploy its e-Government project by responding to the actual citizen demand and satisfying the needs of Jordanian society.

1.6 Research Dimensions

In summary the research has focused on three dimensions related to e-Government in Jordan: the first dimension was Strategy based and it focused on the understanding and requirements to implement e-Government on a national level; best practice has been presented through the construction of a generic e-Government implementation

model. In addition Jordan e-Government implementation on a strategy level has been reviewed based on the conducted document analysis revealing outstanding problems obstructing the development of e-Government. The second dimension in the research was Behavioural based. It investigated people's requirements from e-Government and what factors are affecting people's demand on e-Government and needs have been presented in a linear model which has been tested based on quantitative data obtained through an online questionnaire. The final dimension of this research studied the Service design where online services provided by the Jordanian Government have been examined from their website's content analysis. Figure 1.3 displays the 3 dimensions of the research.

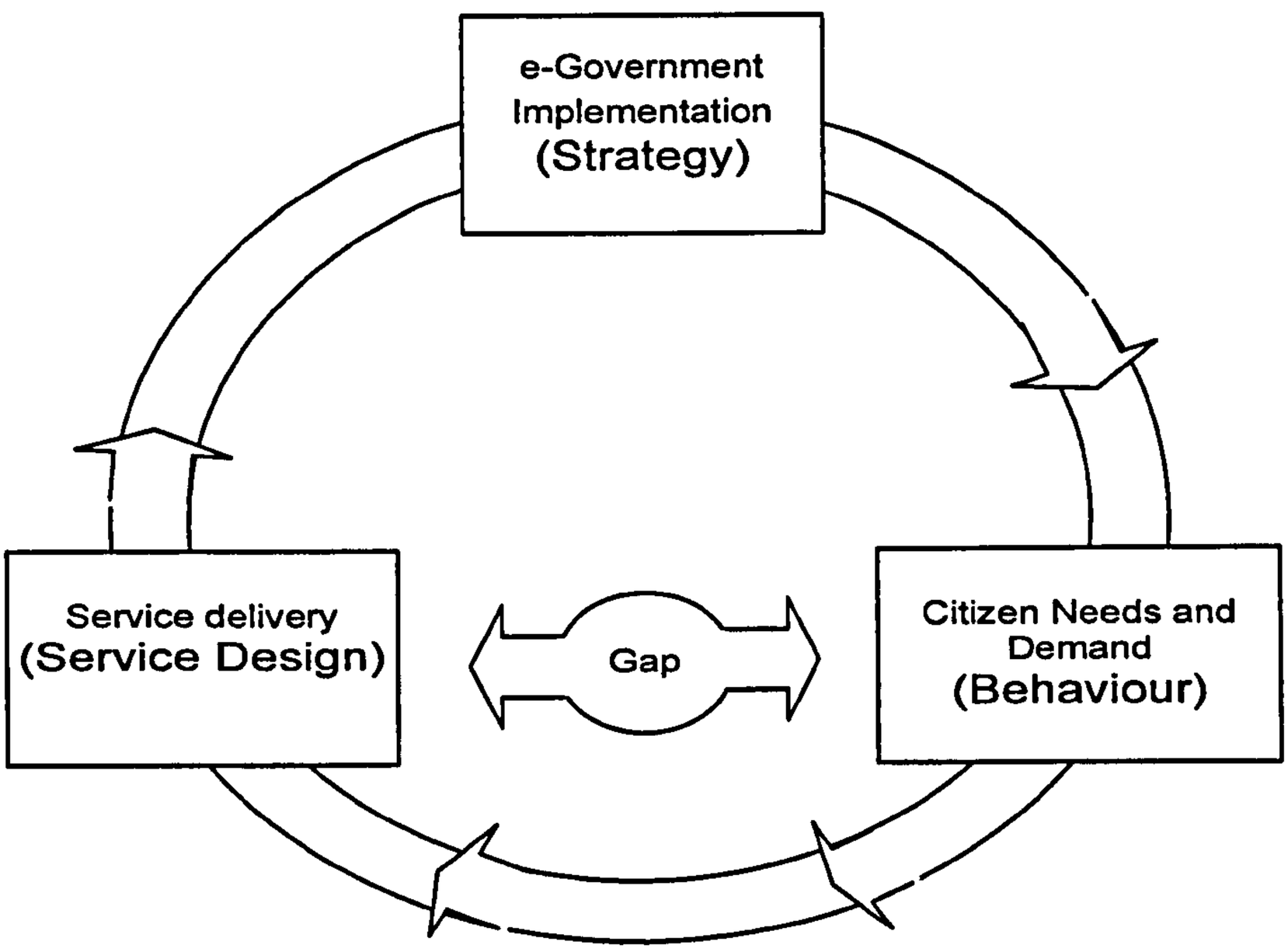

Figure 1.3: Research dimensions

By investigating people's needs and the service supply in the Jordanian Nation the existing gap has been investigated and examined. However, Jordan implementation strategies for e-Government hold the causes and solutions for narrowing the existing gap and for better implementation of e-Government.

1.7 Significance of the Research

1- e-Government in Jordan was launched in the year 2000 (MoICT, 2006), tens of millions of dollars are being spent on the project each year (MoICT & MoPC, 2003). Taking into consideration Jordan's limited resources and financial capabilities, the project promises to achieve social and economic development in addition to being responsive to people's needs (MoPC, 2002). During the period of its implementation there has not been any research that studies Jordan's progress in its e-Government deployment, what the major problems are facing government transformation and how well Jordan is responding to its people's needs and achieving promised development. This research will examine and answer the previous questions so that Jordan can be more effective and responsive in the deployment of e-Government. Other countries as well could benefit from the findings of this research since it showed problems that might not be apparent for e-Government implementers.

2- Many researchers have indicated that e-Government research is in its infancy, calling for more research in different areas within e-Government (Aldrich el al., 2002; Jaeger & Thompson, 2004; Reddick, 2004; Zhang el al., 2005; Norris & Moon, 2005). Researchers who have reviewed e-Government literature indicate that one of the main reasons for the weakness of e-Government research is due to the non existence of a quick and comprehensively grasped e-Government model (Heeks & Bailur, 2006). In response to this, the literature review and constructed e-Government model will bring together different e-Government literature and case studies in an attempt to form a coherent e-Government theory.

3- A number of researchers specifically mentioned people's demands and needs as an important issue in e-Government that requires exploration (Sealy, 2003; Reddick, 2004; Tung & Rieck, 2005; Wei & Zhao, 2005; Choudrie et al., 2005, Reddick, 2005, Centeno et al., 2005), others called for an investigation into the gap between the demand and supply of e-Government (Reddick, 2004; Lee-Kelley & Kolsaker, 2004; Moon & Welch, 2004). This research will respond to these calls of research and investigate peoples needs and the gap between e-Government and people in Jordan.

4- Most of the existing e-Government research simply seems to observe IT as a "good thing" for government, disregarding the proof about downsides relating to technology

and ignoring the evidence of the widespread costs of failure of e-Government (Korac-Boisvert & Kouzmin 1995; Heeks & Bailur, 2007). This may have occurred because of the general hype about e-Government (Heeks & Bailur, 2006). Figure 1.4 by Heeks & Bailur (2006) who reviewed 84 published e-Government research papers indicated that none of the publications had a pessimistic view of e-Government. This research is intended to give an insight into e-Government in Jordan without having this optimistic driver behind it. This will help to expose existing problems and potential disadvantage facing the Jordanian e-Government rather that focusing on e-Government potential benefits to the country which is widely acknowledged in literature.

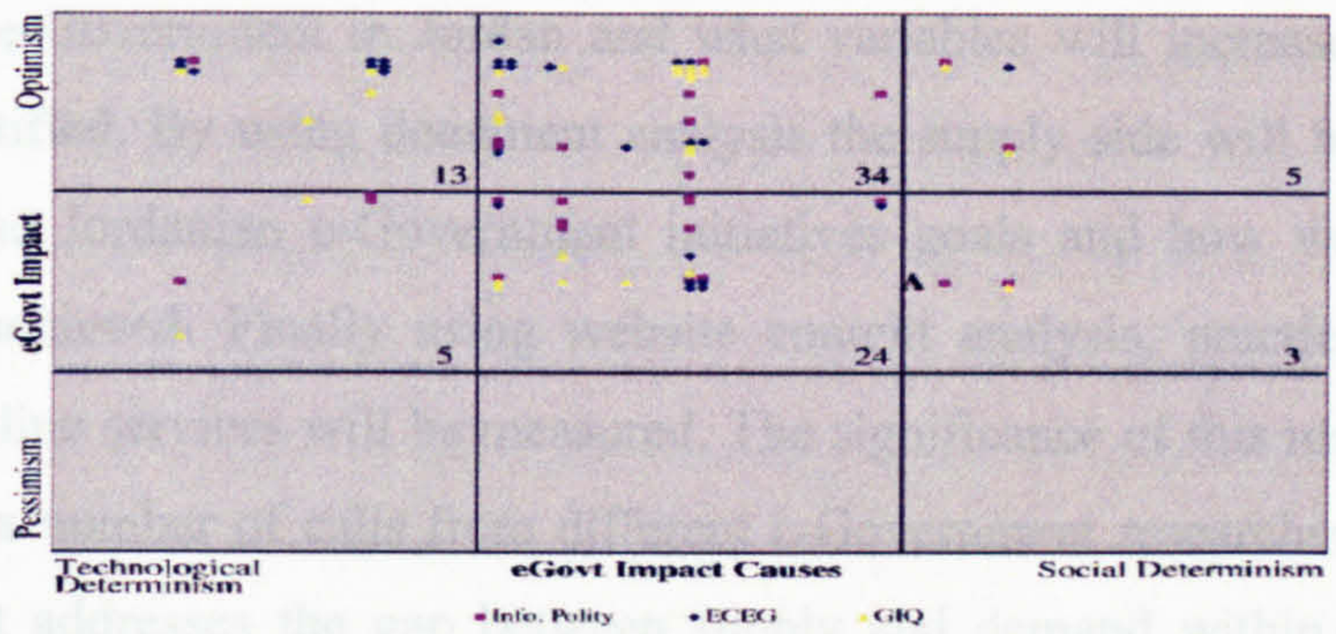

Figure 1.4: e-Government research viewpoints on impacts and cases. Heeks & Bailur (2006)

5- e-Government research is classified as new and emerging (Hackney el al., 2005; Siau & Long, 2005; Ebrahim & Irani, 2005) and most of the existing research has been concerned with problems with its implementation in the developed world. Because of the lack of research into e-Government in the developing world, Jordan will present an excellent opportunity to gain insight into this area of research, filling a gap of e-Government research.

1.8 Summary

This research will review the implementation of e-Government in Jordan by investigating the existing gap between its supply and demand. Furthermore the research will use multi-method methodology, which is a mixture of quantitative and qualitative methods, to address the research problem. The research starts by constructing a generic e-Government model in order to have an understanding of effective implementation and supply of e-Government, in addition to making the researcher aware of underlying problems surrounding e-Government that might contribute to the creation of the gap. Using a quantitative questionnaire people's demand on e-Government in Jordan and what variables will increase their demand will be identified. By using document analysis the supply side will be measured by reviewing the Jordanian e-Government initiatives goals and how well these goals have been achieved. Finally using website content analysis, practical government supply of online services will be measured. The significance of this research is that it responds to a number of calls from different e-Government researchers who call for research that addresses the gap between supply and demand within e-Government implementation (Reddick, 2004; Lee-Kelley & Kolsaker, 2004; Moon & Welch, 2004). Also the research gives an insight into the implementation of e-Government in the developing world from a critical philosophical perspective.

Chapter 2

Literature Review

2.1 Introduction

e-Government is described as being an innovative and evolving topic. The concept e-Government scarcely appears in literature before the year 2000. However, after the year 2000 there was a major takeoff of publications concerned with e-Government and its implementation (Gil-Garcia & Pardo, 2006). Emerging e-Government literature does not go into depth in tracing the historical foundation of e-Government, in addition to the evolution of the concept itself. Furthermore there are plenty of definitions, benefits, types and implementing drivers for e-Government that seem to overlap, also they appear to deal with varying types of e-Government (Heeks & Bailur, 2007). Before conducting any detailed research in the area of e-Government it is essential to have a solid background on the theory of e-Government. Therefore this chapter has been created to bring a theoretical understanding of the e-Government topic. The main goals of the chapter will be to understand where e-Government came from, how it evolved, different forms of e-Government, its benefits, how widespread it is and the drivers of its implementation around the globe. Figure 2.1 summarises the structure of this chapter.

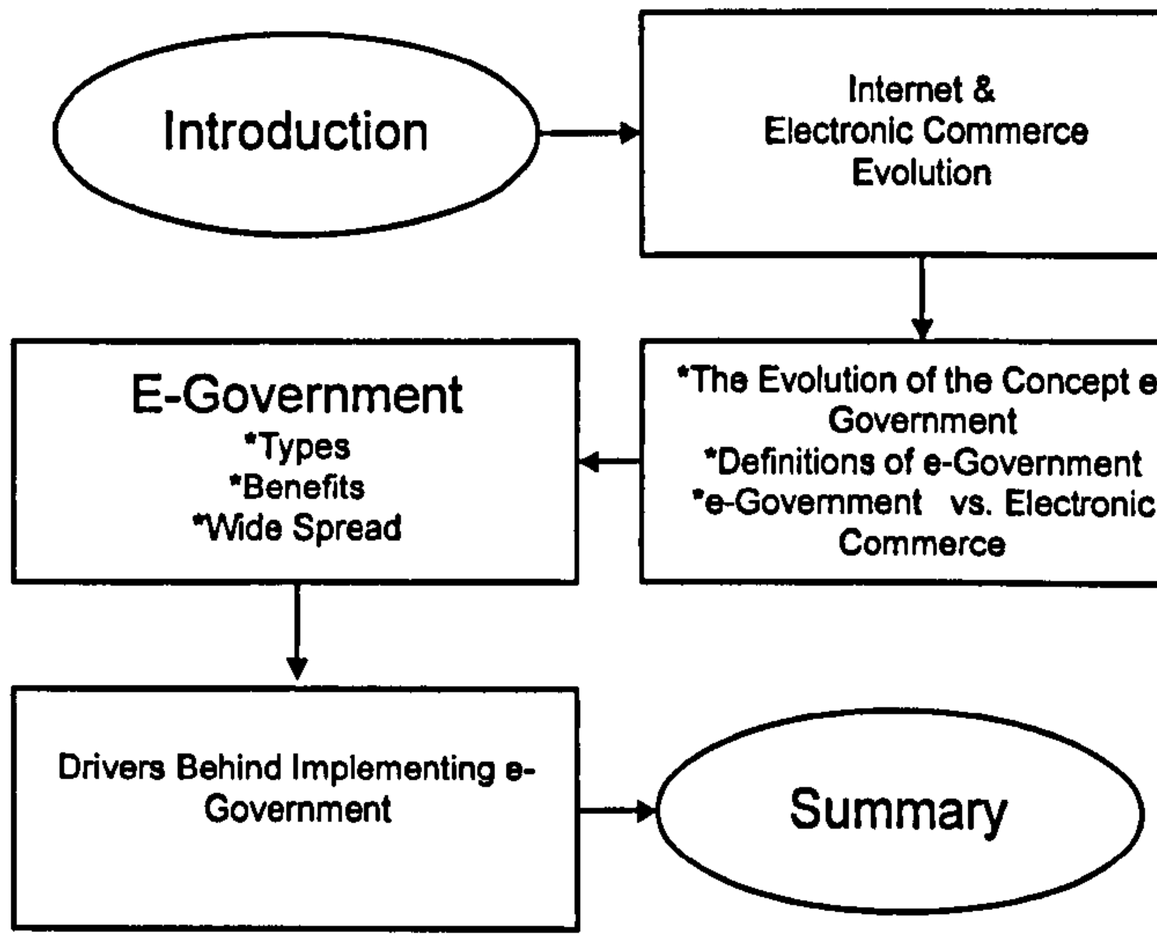

Figure 2.1: Chapter 2 flow

2.2 The Internet Foundation - a Brief History

In the early 1960's when computers were the size of a room, the department of defence in the United States came out with an idea of how it could maintain its command and control over its missiles and bombers, after a nuclear attack. This was to be a military research network that could survive a nuclear strike, so that if any locations (cities) in the U.S. were attacked, the armed forces could still have control of nuclear weapons for a counter-attack. The project was a great success and in the 1970's these innovative networks experienced exponential growth; they became both more complex and more practical. Before long, scientists and academics across the USA were getting involved in this onetime military programme, they began sharing information with one other, linking their databases and communicating via electronic messages, the Internet was born. Through the 1980s and early 90s, the Internet matured. Programmers developed today's standard formatting and hypertext protocols and computers themselves became smaller, faster and cheaper. Versatility increased as new applications began to flood the market. By 1993 the Internet was poised to explode into mainstream America- and it did (Cunningham, 2000; Zilliox, 2001).

2.2.1 Electronic Commerce and the Internet

Timmers (1999) defined Electronic Commerce (EC) as "the exchange of data electronically". Sectors such as retail and automotive were using EC applications from the early 80's through the use of Electronic Data Interchange (EDI). At that time EDI interactions were done without the use of the Internet but by local networking and secured links between business partners. EC through the Internet defined as "the capacity of buying and selling products and information on the Internet and other online services" was founded by the year 1993 along with the rapid growth of the Internet (Turban et al., 2000). From the mid 90's EC began to mature with the emphasis of a variety of secure transaction processing services. Nevertheless EC, has extended all around the world (Benjamin & Elsie, 2003); businesses started shifting from the vertical world to the virtual world (World Wide Web). This has led to the creation of new types of businesses known as electronic Businesses (e-Business). Other business added to their vertical existence virtual presence on the net.

2.2.2 Internet and EC World Wide Adoption

By the start of the new millennium Internet users had increased to a significant number. After the year 2001, over 10 billion e-mails were sent daily; 14 million domain names were registered under the five most popular top-level domains; and the Internet search service, Google, claims to search more than a billion unique locations of web page information. The UK Cabinet Office (2006) indicates that the growth of EC and the Internet is unprecedented - in the UK sales worth nearly £57 billion were made over the Internet in 2000 and 33 million people were reported to be using the Internet by mid 2001.

Business-to-consumer (B2C) category of online auctions has been the most popular; people around the world connected to the Internet are increasing every day. In some continents such as North America around 67% of the population are connected on line. These people connected online tend to be potential customers and targets to be involved in EC activities (UNPAN, 2005). However, the business-to-business (B2B) category of online auctions has become a significant model for businesses to auction their products and services to each other (Parente et al., 2000). In fact in 1999 alone, B2B transactions in online auctions around the world totalled US $109 billion and that figure was expected to grow to US $2.7 trillion by the year 2004. Many studies have been conducted to study and predict the effect of EC on global economy (Colin, 2000). The most optimistic forecasts believe that EC will account for the equivalent of 15% of retail sales within the major global economics, though other studies predict less than 5% by the formative years of the new millennium. One of the most enthusiastic studies predicts that (B2B) EC will account for 30% of the world's economy by 2010 (Timmers, 1999).

2.2.3 EC Success and Benefits

In addition to its rapid takeoff and being implemented by the world's biggest companies around the developed world, EC is reported to have had enormous effects on business, since it helps organisations to establish trade links and alliances together in what is known as value-added e-marketplaces. EC also consolidates relations between business partners or customers through their on line delivery channel. Nevertheless the Internet is ideal for reaching international markets instantaneously

and as a medium for exchange. EC through the Internet provides buyers and sellers with cost and process benefits (Parente et al., 2000), B2B auctions benefiting both buyers and sellers. EC also decreases the transaction cost and increases its efficiency (Rotondaro, 2002). What is more EC has affected and restructured processes in a way that makes it possible for businesses to respond more effectively (Lightfoot & Harris, 2003). General Electric reported enormous savings on the US $6 billion they auctioned via e-markets in 2000 and envisaged similar savings on the US $14 billion they planned to sell on-line in 2001 (Kandampully, 2003). Dell Computers, the biggest computer seller in the world, have ultimately shifted to the virtual world. They reduced retailers, physical shops and tried to integrate directly through the web with customers (Magretta, 1998). Moving online has led to their magnificent success after being in a critical position in the world market. Carroll & Broadhead (2001) summarised EC benefits be in the following points:

1. Better record keeping
2. Promotes "just in time" management practices
3. Reduced long-term costs
4. Reduced lag time
5. Better management decision making information at all levels
6. Extend the range of sales territory
7. Streamline communication to suppliers and clients
8. Expand reach to new clients
9. Improve service to existing clients
10. Reduce paperwork and time spent on correspondence
11. Track customer satisfaction
12. Improve collaboration on work projects
13. Expand markets beyond geographical, national boundaries
14. Improve relations with client
15. Establish position in emerging EC marketplace
16. Lower costs of overheads
17. Realize economies of scale by increasing sales volume to new markets
18. Monitor competition and industry trends

2.3 Evolution of the e-Government Concept

Plenty of arguments were found in the literature explaining the emergence of the e-Government concept, yet there is no agreement on the verdict. The following review will interpret different views on the emergence of the term "e-Government" and will bring together different opinions for its emergence.

2.3.1 ICT and the Public Sector

The use of ICT in the public sector and the arrival of the Internet as a tool of ICT were the enablers and the core creation of the e-Government. Governments around the world have successfully implemented technologies in the public sector life since the 70's (Kraemer & King, 1977; Fletcher et al., 1992; Norris & Kraemer, 1996). Due to the massive growth in high-tech technologies e-Government concept was founded to indicate the use of electronic communication technologies in public sector life (Fountain, 2001). The term 'e-Government' is thought to have been first used during the Clinton Administration in 1993. Under the direction of Vice-President Al Gore, the Clinton administration undertook a major governmental reform effort by implementing ICT in the public sector; the reform was initially called the National Performance Review (NPR). The aims of the main NPR report of 1993 were explicit

> "Our goal is to make the entire federal government both less expensive and more efficient and to change the culture of our national bureaucracy away from complacency and entitlement toward initiative and empowerment. We intend to redesign, to reinvent, to reinvigorate the entire national government . . . We need a federal government that treats its taxpayers as if they were customers and treats taxpayer dollars with the respect for the sweat and sacrifice that earned them." (National Performance Review 1993)

In 1998, the NPR was renamed as the National Partnership for Reinventing Government; however, the focus continued the same - to examine use of the ICT and the Internet to create a new infrastructure and 'logic' for organizing federal government plus moving the American government further towards the digital age. Supplementary to this, the aim of the NPR was to "create a government that works better and costs less". The whole emphasis of the NPR was to look at cutting costs in the public sector, while increasing the services offered to citizens. This emphasis is the overriding focus of many e-Government projects globally and is one of the main appeals for many governments setting up or investigating any application of ICT for governmental use.

2.3.2 e-Government driven from EC

The second argument states that e-Government is one type of EC activity or is in one way or another influenced, provoked and founded through EC and the private sector; therefore e-Government is a public sector version of EC. It has been argued successful private organisations are known for their thriving adoption of new technologies in their process methods so that they could sustain their leading edge in the business (Hill, 1985). The private sector started adopting ICT in what was called e-Business and EC in the early 90's. It might be that private sector success has influenced the public sector to adopt EC and its applications. Furthermore by this time the public sector's rapid implementation of ICT was known as e-Government. Nikoloyuk et al., (2005) said "The migration of e-commerce tools and practices into government organizations is changing the way that citizens and governments interact". Other researchers (Chaffey, 2002) identified e-Government as being one type of EC activities. The UK Department of Trade and Industry (DTI) defines EC as "the exchange of information across electronic networks, at any stage in the supply chain, whether within an organisation, between businesses, between businesses and consumers, or public and private Sector, whether paid or unpaid" (The UK Cabinet Office, 1999). Chan & Swatman (1999) said that "Electronic commerce involves the undertaking of normal commercial, government, or personal activities by means of computers and telecommunications networks; and includes a wide variety of activities involving the exchange of information, data or value-based exchanges between two or more parties".

Privatisation is a method used to enhance productivity and bring better services for the public sector; it started in the early 1990's in the USA, UK and other countries. Therefore EC could have migrated to the public sector by the boost of privatisation in the leading developed countries and EC applications were re-named as e-Government within the public sector. Pentland (2000) observes that the privatisation of governmental agencies in Canada brought new working methods acquired from the private sector which endorsed the use of new ICT to achieve high standard output. The final argument is that e-Government was part of the EC strategy in countries and by that time it had gained more attention and importance consequently overtaking EC. New Zealand for example has an isolated geographical location, EC is considered one on the most important and promising methods through which it can be connected and

reach the world market. e-Government strategies emerged as a way to improve the status of EC (Ministry of Economic Development, 2000; State Service Commission, 2001). In Singapore the Research Report Singapore (2003), which assesses the country e-Readiness[4], stated:

> "e-Government, the online provision of public services to citizens, came about from the government's adoption of e-commerce strategies, which had long been in use by the private sector to sell goods and services electronically. This radical change came about as a result of a number of reasons. These are namely, the pervasiveness of the World Wide Web; the growing online population; the lower cost of providing services online; and increased public expectations of the government"

2.3.3 Reaching a Verdict on the Origins of the e-Government

The most sensible argument regarding the foundation of the e-Government concept is a compromise between all previous arguments. e-Government emerged as a natural extension of ICT and use of the Internet in the public sector, combined with the influence which EC applications had on the public sector, in addition to countries adopting EC strategies. All of these have directly influenced academics and governments to come up with the concept "e-Government" that describes the public sector rapid implementation of ICT similar to private sector implementation of e-Business and EC. Schedler et al., (2004) have said:

> "e-Government as it is often known is closely related to the concept of electronic business (e-Business) and EC known from the private industry. Like these concepts, e-Government also arose out of the spread of new information and communication technologies (ICT), in particular the Internet. The aim of e-Government is to implement these new technologies not only in the area of private industry, as is the case of e-business but also in government and politics".

This however contradicts arguments that considered that EC and e-Business is a subset of e-Government (Zhiyuan, 2002). Chan & Swatman (1999) defined e-Government online activities as being a type of EC, "Electronic commerce involves the undertaking of normal commercial, government". Moreover people around the

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[4] Electronic Readiness (e-Readiness): Is the countries ability to use ICT to develop one's economy and to foster one's welfare. There are several benchmarking indices at the macro level, e.g., those calculated by the UNPAN, World Bank, Economist Intelligence Unit etc.

world could be involved in EC activities without their countries necessarily being involved in e-Government projects.

2.4 e-Government is an Emerging Global Phenomenon

A decade ago, even the most technologically aware policy specialists probably would have found the state of e-Government in 2005 to be unexpectedly robust and to have already come a long way for the time being. Although various ideas had been suggested to use electronics and IT to increase citizen interaction with government since the 1960s, e-Government has been embraced with great enthusiasm by many governments. Now local, regional and national governments around the world are striving to establish or expand their presence on the World Wide Web. Both the developed and developing nations have either implemented or are willing to implement e-Government programmes. e-Government truly has become a global phenomenon, like many other terms that have arisen during the nascent periods of the Internet age (Jaeger, 2003).

The United Nations (UN) Report 'Benchmarking E-Government: A Global Perspective' UN/ASPA (2002) which summarised a digital snapshot of the global e-Government landscape during 2001, concluded that out of 190 UN member states, 88.9% of their national governments use the Internet in some capacity to deliver information and services for citizens and businesses. More recently The UN 'Global e-Government Readiness Survey' UNPAN (2005) assessed more than 50,000 features of e-Government websites of the 191 UN member states. The assessment also included telecommunication infrastructure and human resource endowment. According to the e-Government readiness survey the United States of America is ranked in the first position as e-Government world leader scoring 0.913 out of 1, followed by Denmark 0.904, the United Kingdom 0.885 and Sweden, The Republic of Korea. Estonia, Malta and Chile were also among the top 25 e-Ready countries.

Other reviewed reports such as 'The Global e-Government' (West, 2002; 2003; 2004; 2005), Accenture and the 2005 e-Readiness rankings by The Economist Intelligence Unit, have monitored and evaluated e-Government on a global level. Furthermore country members in international organisations, commissions and leagues such as

OECD[5], Economic and Social Commission for Western Asia, The Arab League, are monitoring evaluating and publishing reports on the progress of e-Government in their member states. It is not only on the national level that there is a huge spread of e-Government initiatives, at a local level as well e-Government is achieving a significant amount of attention especially from the countries who are being most successful in implementing their e-Government initiatives. Many local governments started to develop e-Government strategies between 1994 and 1999 (Ho, 2002) and by 2000, many cities in the United States already had an official Website (Moon, 2002; Peng & Chen, 2005). An assessment of municipal web sites throughout the world by Holzer & Kim (2004) indicated Seoul, Hong Kong SAR, Singapore, New York and Shanghai are the leading cities in the world in implementing e-Government. A study conducted by Norris & Moon (2005) included the analysis of more than a two thousand cities in the USA alone which had in some way implemented e-Government. It is evident that governments around the world are aiming to adopt e-Government projects (Weber et al., 2003). Both developed and developing countries (Basu, 2004) are implementing e-Government initiatives, Stoltzfus (2005) said:

> "Although e-Government is considered emergent by researchers, it seems to have already achieved global appeal based on such factors as the number of nation-states launching digital government programs and the urgency that permeates planning and development. With the potential advent of the global explosion of e-Government."

Canada, The USA, Great Britain, Norway and other developed countries with leading economies are considered to be the leaders of e-Government implementation. On the other hand Singapore, China and Malaysia and other West Asian countries are also pushing hard and succeeding in benefiting from their e-Government initiatives (Peng & Chen, 2005; Ma et al., 2005; Wood-Harper et al., 2004). Nevertheless, most of the remaining developing world is struggling with their e-Government initiatives, although having ambitious e-Government drivers and strategies.

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[5] Organisation for Economic Co-operation and Development (OECD): Is an international organisation of thirty countries, that accept the principles of representative democracy and a free market economy. The organisation provides a setting where governments can compare policy experiences, seek answers to common problems, identify good practice and co-ordinate domestic and international policies. The mandate of the OECD is very broad, as it covers all economic, environmental and social issues. Member states Include the USA, Britain, Japan, Australia most of the EU and others.

2.5 What is e-Government?

At this early stage of the research it's very important to understand different definitions of e-Government in order to achieve smooth progress throughout the development of the research. Literature shows that there is no standard definition of the concept of e-Government. Stoltzfus (2005) states "in order to claim that e-Government is indeed a global phenomenon, it requires clear definition... there does not yet exist a globally standardized definition. Furthermore, "digital government", "e-Democracy[6]" and "e-Services[7]" are examples of the various terms used to describe the same endeavour". The reasons for not having a standard definition of e-Government are due to a number of factors. The most important are:

1. Different countries have perceived the meaning and content of e-Government differently. Countries tend to define it by relating e-Government to their specific political systems (Sharifi & Zarei, 2004).
2. There are plenty of areas overlapping and interfacing with e-Government. e-Administration, e-Service, e-Democracy, e-Governance and Digital Government are all concepts related to, or equivalent to e-Government (Dawes et al., 2004).
3. e-Government is a "dynamic concept" that has arisen within a very brief period of time (Reylea, 2002).
4. e-Government as a topic can be viewed from different perspectives such as social, managerial, technical and political. This makes creating a workable definition of e-Government very difficult (Jaeger, 2003).
5. e-Government has plenty of stockholders (Government, People and Businesses) and as a result of all their diversities they interact and are affected by e-Government differently. This creates a number of perspectives from which to consider e-Government. A comprehensive perspective completed by Lenk & Traunmuller (2000) indicated that e-Government can be divided into the following perspectives: (1) e-business perspective, (2) citizen perspective,

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[6] Electronic Democracy (E-democracy): Is a portmanteau of electronic and democracy, comprises the use of electronic communications technologies, such as the Internet, in enhancing democratic processes within a country.

[7] Electronic Service (e-Service): Is the process of organisations using electronic communications technologies, such as the Internet, to deliver services to users.

(3) process perspective, (4) knowledge perspective, (5) tele-cooperation perspective (Sharifi & Zarei, 2004).

2.5.1 Reviewing Existing e-Government Definitions

Reviewed literature revealed three main dimensions in defining e-Government. These are:

A- A tool of service and information delivery to citizens: The United Nations (UN) and the American Society for Public Administration (UN/ASPA, 2002) defined e-Government as "utilizing the Internet and the World-Wide-Web for delivering government information and services to citizens", e-Government also was defined by Burn & Robins (2003) as "governments efforts to provide citizens with the information and services they need, using a range of information and communication technologies". Luling (2001) defines e-Government as "online government services, that is, any interaction one might have with any government body or agency, using the Internet or the World Wide Web", Hernon et al., (2002) stated "e-Government employs technology, particularly the Internet, to enhance the access to and delivery of government information and services to citizens, businesses, government employees and other agencies".

B- A tool for improving the public sector: e-Government was defined by (OECD 2003; 2003b) as "The use of information communication technologies and particularly the Internet, as a tool to achieve better government". Norris & Moon (2005) state "e-Government is thought at the minimum, to enlarge and lengthen the reach of the government organisations and agencies to serve their constituencies in a way which will benefit both government and its citizens". Fang (2002) defined it as "e-Government is defined as a way for governments to use the most innovative information and communication technologies, particularly web based Internet applications, to provide citizens and businesses with more convenient access to government information and services and to provide opportunities to participate in democratic situations and processes".

C- A tool of process reengineering and cost effectiveness: Gartner Group (2000) defines it as "Electronic government is the continuous optimization of service

delivery, constituency participation and governance by transforming internal and external relationships through technology, the Internet and new media". Peng & Chen (2005) state "E-Government refers to such links and processes that by using modern network communication and computer technology, the government simplifies, optimizes, integrates and recombines governmental management function and service function and then operates them on the network, which can break the limitation of temporal, spatial and organization separation to raise governmental efficiency and offer a efficient, excellent and uncorrupted service for the public". Lieber (2000) defines e-Government as "implementing cost-effective models for citizens, industry, federal employees and other stakeholders to conduct business transactions online".

2.5.2 Finding a Universal Definition of e-Government

Looking at the previous definitions, it is noticeable that there is no standard definition of e-Government. At the academic level it is defined according to the area of research it will be attached to, so if an academic wants to research or discuss the role of e-Government in promoting democracy or citizen empowerment it will be defined as a tool of service and information delivery to citizens. However, other researchers could be interested in the effect of e-Government on the inter-organisation process within government agencies, then e-Government would be defined as a tool of public sector reform and process reengineering. Nationally e-Government is defined according to the driver behind the initiative. A universal definition for e-Government could be: 'the use by government agencies of f ICT that have the ability to transform relations with citizens, businesses and other within government. These technologies can serve a range of different ends: better delivery of government services to citizens, improved exchanges with business and industry, citizen empowerment through access to information, or more competent government management. The resulting benefits can be less corruption, improved transparency, better convenience, revenue growth, cost reductions and increased democracy'.

2.6 Similarities and Differences between EC and e-Government

2.6.1 Similarities between EC and e-Government

Since e-Government is in some way an extension of EC there will be many similarities and common issues shared between the two. The main similarities are:

A) Similarities in technology and categories: EC and e-Government are both based on Internet technology, designed to facilitate the exchange of goods, services and information between two or more parties. EC refers to the commercial use of Internet technology to sell and purchase goods or services. The three-major EC categories are:

- Business-to-consumer (B2C).
- Business-to-business (B2B).
- Customer-to-customer (C2C).

B2C commerce refers to the retailing of products or services from businesses to individual shoppers. Amazon.com is a leading example of B2C activities. B2B commerce is the sale of goods and services among businesses. Toyotasupplier.com is one of the principal examples of B2B activities. In C2C commerce, consumers sell goods and service to other consumers online. Auctions such as ebay.com are an ideal example of C2C activities (Turban et al, 2000).

Comparable categories for e-Government:

- Government-to-consumer or citizen (G2C)
- Government-to-business (G2B)
- Government-to-government (G2G)

Seifrt & Petersen (2002) and other e-Government researchers identify a fourth category, Government-to-employee (G2E). Since G2E operations tend to focus on internal, administrative activities, they can be considered a subset of the G2G sector. Others classify government activities to 6 categories (Belanger & Hiller, 2006). Whatever the number of categories found they are all an extension or are a subset of the three main categories.

G2C government allows citizens to retrieve information and complete government transactions, such as license renewal online. G2G government supports online

communication and interaction among government agencies or within an agency it self. G2B government allows businesses to retrieve timely government information, furthermore complete transactions with government agencies, such as bid submission, e-Procurement, as well as other activities. Figure 2.2 identifies and explains different categories of e-Government

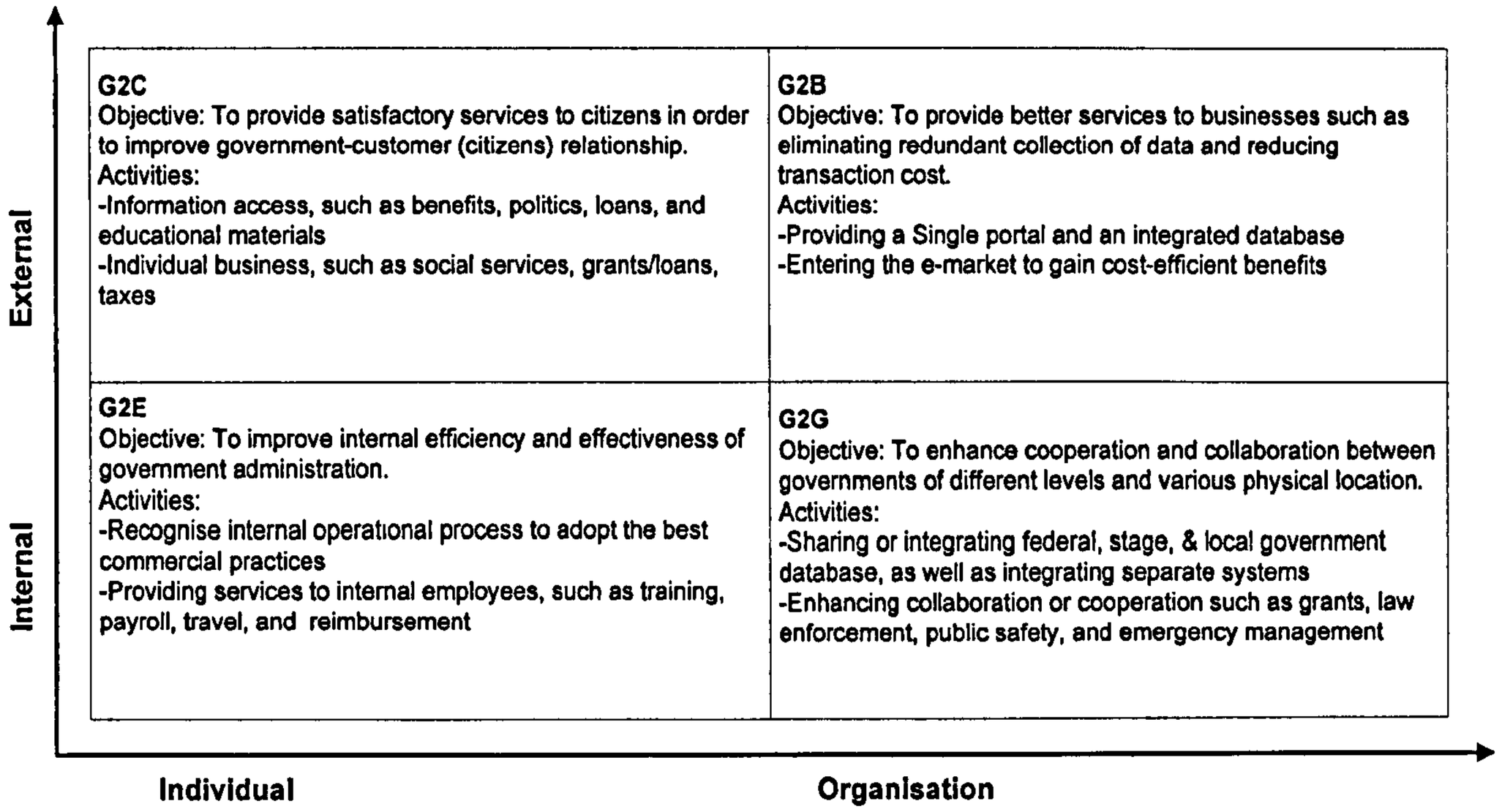

Figure 2.2: Types of e-Government activities. Siau & Long (2005)

B) EC and e-Government generally have similar effects on organisations and their users: EC and e-Government provide similar services to individuals and organizations (Pavlou, 2003). Organisationally e-Government effects on governmental bodies (agencies) structure, process, culture, which in turn affects technical requirements and human power requirements and problems, are similar to EC in the private sector. For example training employees will present similar problems as in the private sector, when moving from the vertical to the virtual existence, lack of resources (human and financial), change, integration, leadership requirements are almost similar.

From the social perspective both EC and e-Government systems support the electronic mediation of transactions over potentially great distances (Warkentin et al., 2002). With the absence of face-to-face interaction, technology acceptance, diffusion of innovation and trustworthiness models play a role in user acceptance of EC (Gefen,

& Straub, 2000; Moon, & Kim, 2001; Gefen et al., 2003; Pavlou, 2003). It is expected that they will also affect citizen adoption of e-Government (Warkentin et al., 2002; Carter & Belanger, 2004; 2004b; 2005).

2.6.2 Differences between EC and e-Government

Despite discussed similarities between EC and e-Government in addition to their both being reliant on Internet technologies and the need to progress along the ICT continuum, e-Government faces some issues and challenges uniquely different from those of EC (Chen, 2002).

A) Access, structure and accountability: Jorgenson & Cable (2002) identify three major differences between EC and e-Government:

- Access: In EC, businesses are allowed to choose their customers in addition to targeting them. However, in e-Government, agencies are responsible for providing access to information and services to the entire eligible population, including individuals with lower incomes and disabilities. The digital divide makes this task of providing universally accessible online government services challenging.
- Structure: The structure of businesses in the private sector is different from the structure of agencies in the public sector. Decision-making authority is less centralized in government agencies than in other businesses. This dispersion of authority impedes the development and implementation of new government services.
- Accountability: In a democratic government, public sector agencies are constrained by the requirement to allocate resources and provide services that are in the best interest of the public, therefore when integrating with other agencies or investing in systems in order to achieve a required seamless service, problems could arise where an agency might have other priorities than meeting such requirements, this is different in the private sector.

B) Custom ers are different from citizens: Stahl (2005) identifies an important difference between EC and e-Government which is that customers are different from

citizens. The role of citizens in state and government is fundamentally different from the role of customers in a company. Companies exist for purposes, which are identified by their owners. These may include profit production, extension of influence, reputation improvement. This is different for governments, which exist for the citizens. The citizens are at the same time the owners and the decision makers of governments. Without citizens governments would cease to exist. Citizens are not customers, they are stakeholders. This means that while some aspects can provide analogies between customers and citizens, certain aspects have a greater significance in governments. Citizens are the ultimate sovereign and they should have some voice in decision making. Also governments are not markets which mean that they have different characteristics. Gordon (2002) supports this view by stating "E-commerce is not at the heart of e-Government. The core task of government is governance, the job of regulating society, not marketing and sales. In modern democracies, responsibility and power for regulation is divided up and shared among the legislative, executive and judicial branches of government".

2.6.3 Linking e-Government to EC

It has been noticed that EC has played a major role in the creation and the foundation of e-Governments. From a technical perspective EC and e-Government share many common aspects when comparing a Government agency with a company. Zhiyuan (2002) supports this argument he says "e-Government will continue to depend on the realization of technical advances in Electronic Business in the broadest sense. Electronic Business refers to a broader definition of Electronic Commerce, not just buying and selling but also servicing customers and collaborating with business partners and conducting electronic transactions within an organizational entity".

However differences between the two arise when taking into consideration the complex structure of government (different government agencies) compared with a single company. Also government has the obligation to enable people and businesses to implement e-Government which is not necessary in private companies. The diversities between government agencies and companies' creation and responsibilities has led to e-Government needing more technical, managerial, social and political requirements, because ICT infrastructure, political influence, bureaucracy, agency integration, power sharing, legislations, constitution change and plenty of other issues

will arise and take place when implementing e-Government leading to a more complicated and different type of normal e-businesses and EC application (Csetenyi, 2000).

2.7 Benefits of e-Government

The promises of e-Government are ample. Reviewed literature (Holliday, 2002; Heeks, 2003; OECD 2003; 2003b; 2003c; 2003d; 2003e; 2005; Cho & Choi, 2004; UNPAN, 2005) highlights a variety of benefits that could be achieved by implementing e-Government projects. Every country adopting e-Government wishes to obtain most of its promised benefits. If an e-Government project is successfully implemented benefits will be experienced by the main stakeholders of the e-Government project, these are people, businesses and government (Zhang et al., 2005). Mega benefits on the national level such as the development of the economy and the reform of the public sector, are the result of the accumulation of the benefits on an agency level in a country, such as cost saving or increased efficiency (Zhang et al., 2005). The following review will highlight most e-Government benefits for its main stakeholders.

2.7.1 Benefits to Government

a) e-Government improves efficiency and services: ICT allows efficiency improvements in processes and operations within the public administration activities. Internet-based applications can produce massive time savings and improvements for data collected works, transmissions and sharing of information with customers which will make services more transparent.

b) e-Government helps achieve specific policy outcomes: The Internet can help stakeholders share information and ideas and thus contribute to specific policy outcomes. i.e. Online information can boost the use of an educational or training programme while sharing of information in the health sector can improve resource use and patient care.

c) e-Government contributes to economic policy objectives: e-Government reduces corruption by using different modules of services procurement and online bidding. Also e-Government implementation in a country will significantly promote EC along

with local ICT industries, either software or hardware. This produces much expertise in the ICT sector which can be exported to other countries. Analysis by Forrester Research suggests that online revenue collections by government (federal, state and local) in the USA will increase from US $5.1 billion in 2000 to US $602.4bn in 2006 (Fountain & Osorio-Urzua, 2001).

d) e-Government can be a major contributor to reform: e-Government aims to serve its stockholders from a one point output which is the government portal. To achieve that, enormous change to the back office of public sector departments is needed. Service processes will require redesigning, restructuring and integration within and across government bodies which will lead to a major reform of the public sector.

e) Improves government image and builds trust: e-Government makes individuals' voices, feedback and point of view heard in the mass debate by creating online forums or by constructing public debate rooms on the net. People can be updated with recent governmental developments through governments' websites or by registering with an online mailing list. This makes people more bonded with government and adds a new interaction channel with government. This channel if appropriately used can improve trust level and present government in a better image to citizens.

2.7.2 Benefits to Businesses

a) Improve the obtaining of data: licences enquiries, information about regulations, terms and conditions and laws all become faster and easier when obtained online.

b) Business government integration: some businesses could technically integrate with government through their EDI capabilities and share databases, accomplish payments, license shipments and declare customs.

c) Access, time, cost and control: through e-procurement, tax payment, custom declaration and any other online service could benefit their business by improving their access to services which will result in time, cost and control savings.

d) New market creation: IT spending in a country will increase demand for both software and hardware products, businesses will benefit from the new emerging IT market.

e) EC development: e-Government will promote EC regulations, also e-Government will increase connectivity between citizens, which will lead to more people going online and potentially being EC users.

2.7.3 Benefits to Citizens

Scholars have researched potential benefits of e-Government for people on a personal level (Glibert & Balestrini, 2004). This has been done by investigating the benefits of using the Internet to perform service execution activities rather than having to visit Governmental agencies. Researchers found that benefits on a personal level included time, cost, control, time saving and other benefits figure 2.3 illustrates some of those benefits. Other researchers explored benefits to citizens from a wider prospective where e-Government will have an effect on the whole society (MacIntosh et al., 2003). These effects included promoting democracy, e-Society development and other benefits. The following points will highlight e-Government potential benefits for people:

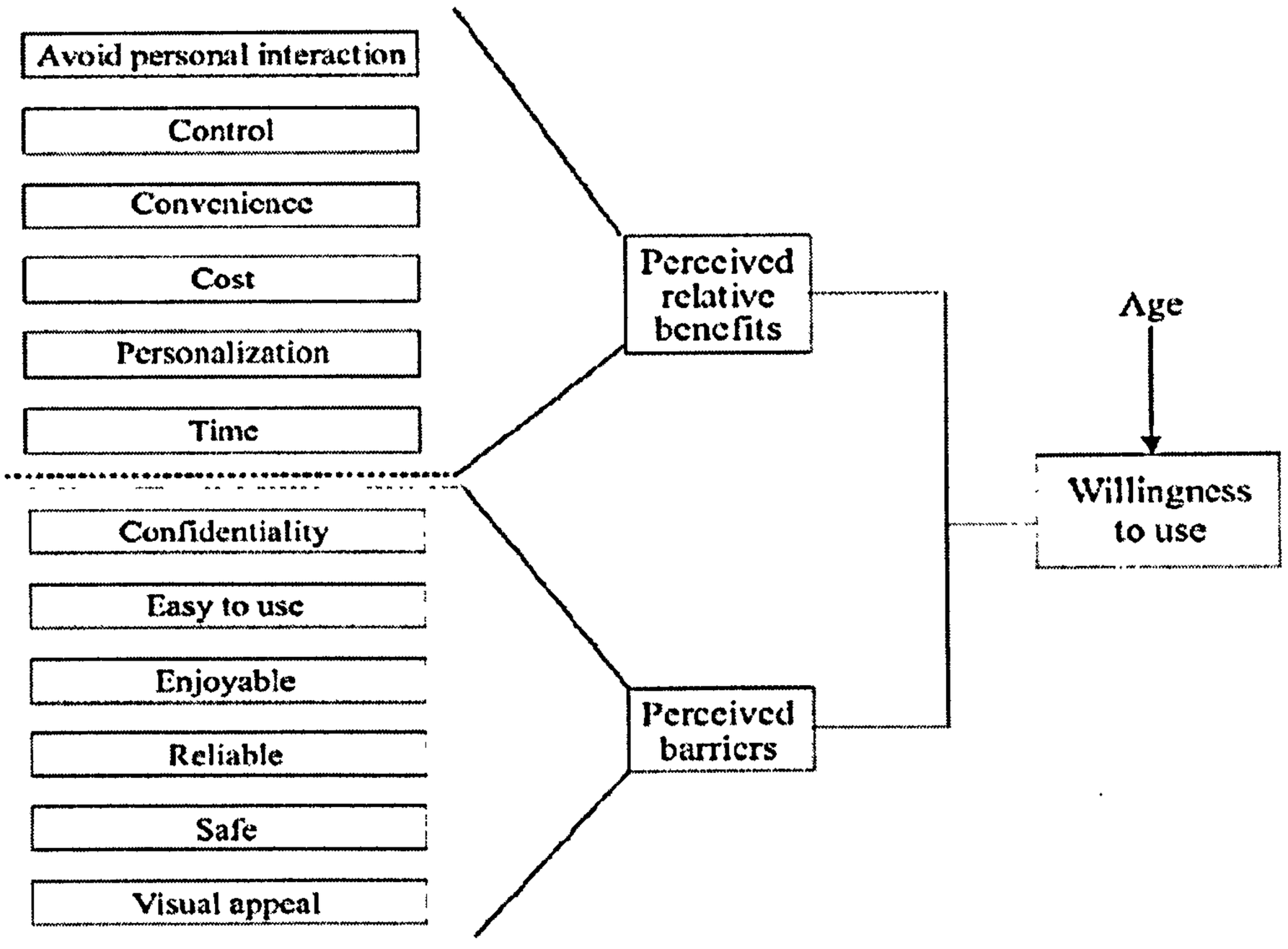

Figure 2.3: e-Government benefits to people. Glibert & Balestrini (2004)

a) Improved Access to Government Services: Access will be any time any place 24/7 access (The UK Cabinet Office, 1998; Meuter et al., 2000; Zhu et al., 2002).

b) Personal benefits for users: time saving, cost reduction, personalisation of service, control over service, avoiding interaction with governmental officials and convenience of service (Glibert & Balestrini, 2004).

c) Single input with higher quality: services will be delivered through one channel not by visiting multiple agencies. Moreover, it will be more efficient, transparent and

progress could be monitored (The UK Cabinet Office, 1998; Dabholkar, 1996, Zhu et al., 2002; Meuter et al., 2000).

d) Improve participation and interaction with government: inquiry methods and feedback could be implemented. Also people could be updated with latest developments or involved in a public debate online, in some cases e-Government will attempt to enable e-voting, all of these activities could contribute in democracy development.

e) e-Society development: e-Government will promote ICT education in the country. This could help the people to become more technology friendly and have better IT education. In addition promoting ICT investments and developing networks will make it cheaper for people to acquire technologies and connections.

2.8 Types of e-Governments

Different types of e-Government have been identified; many studies conducted by researchers were undertaken on e-Government projects examining the various types. Categories of e-Government are as follows:

1- Local level (Municipality, City council): the e-Government website provides services for one city (Bovaird & Löffler, 2002; Odendaal, 2003; Hartford 2005; Irani et al., 2005).
2- Regional level (State, Provincial and County): the e-Government website provides services for more than a city. It represents a whole county or a state. This type usually needs a portal and it includes few agencies going online together (McNeal et al., 2003; Chadwick & May, 2003; Ho & Ni, 2004). However, Heeks (2006) distinguished between regional level and (State/Provincial) this led to him dividing e-Government to 5 major categories.
3- National level (Nation, Country): Most of the countries around the world have initiated e-Government projects. National e-Government was found to be the trigger for local and regional e-Government to take off. It has an impact on the whole population and the country's economy, needs massive investments and it requires governmental agencies' integration to achieve maximum output (Muir & Oppenheim, 2002; Stratford, 2004; Paris, 2005).

4- Global or supranational: countries integrating together to form an e-Government portal to deliver e-services. This type has an impact on all of the population in the countries (Wimmer, 2002; Diez & Prenafeta, 2002).

2.9 Drivers of e-Government

Many diverse factors from the promise of ICT, internal and external pressure, natural technological advance in public sectors and others have led to the adoption of e-Government projects on a national level in different countries around the world. These factors are the drivers of e-Governments. In each country e-Government has its own drivers which will have a direct impact on the required out put of e-Government. The drivers vary from country to country based on the country's profile. This includes capabilities (developed, developing), size (big, small), culture (open, closed) and regime (democratic, non-democratic). The following review will highlight the drivers behind e-Government around the nations of the world, by tracking down its historical development around the globe.

2.9.1 The Leaders

Leaders refer to the countries that were the early adopters of e-Government projects around the world which started their implementation between the years 1990-1995, the following discussion will go back to the historical origins of the arrival and development of e-Government theories and practices in those countries.

A) NPM and e-Government: Total Quality Management (TQM) appeared in the late 70's and 80's achieving successful results in the USA's private sector in the mid 1980's. After that TQM ideas started moving to other countries in the developed world such as Australia and European Union (EU) countries (Saxena, 1996; Hughes, 2003). By the late 80's and early 90's the appearance of NPM proponents in the public sector advocated the adoption of private sector management principles, assuming competition and the efficiency of markets are good for service delivery in government (Terry, 1998). From then TQM principles started moving to the public sector under the name of NPM with an emphasis on professional management practices including service quality, performance management and risk management rather than simply "administration". e-Government represented the appropriate tool to

build on the administrative reform policies required to enable NPM that had been based on TQM principles implemented in the private sector (Saxena, 2005).

Teicher et al., (2002) clarifies that e-Government can be used to address a number of the principal aims of TQM for the public sector, particularly those related to the need to be customer-driven, empowering of communities, workers and customers, while also improving effectiveness and efficiency of the public sector services. e-Government goes even further and aims to fundamentally transform the production processes by which public services are generated and delivered, thereby transforming the entire range of relationships of public bodies with citizens, businesses and other governments (Leitner, 2003) figure 2.4 shows how e-Government builds upon the NPM concept. In this way NPM was one of the main drivers of electronic government in USA, Australia and plenty of other developed countries which are described as early adopters or the leaders of e-Government (Teicher et al., 2002). Leitner (2003) is quoted as saying "e-Government is different from but builds on the administrative reform policies inspired by New Public Management implemented throughout the European Union and the USA over the past two decades". Therefore the real driver of e-Government for the early adopters in the developed countries was managerial (Ho, 2002). Saxena (2005) says "e-governance is perhaps the second revolution in public management after NPM".

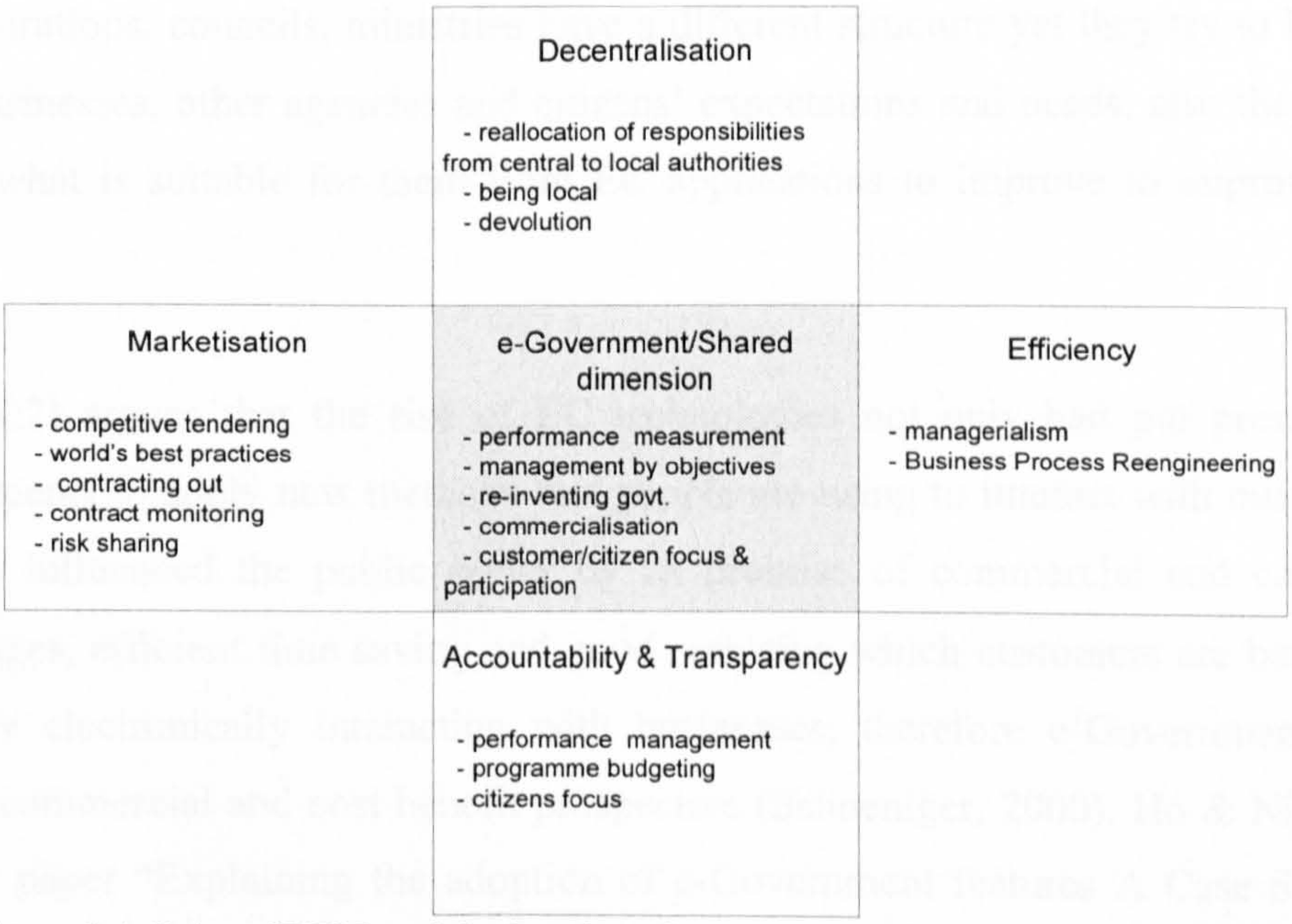

Figure 2.4: Poles of NPM: and the location of e-government. Navarra & Cornford (2007)

Other researchers mentioned that e-Government is an extension of specific factors within NPM particularly as it is citizen centric, countries practising NPM theories started also to turn their attention to building relations with citizens (Scavo, 2003; Seneviratne 1999). Which means that e-Government will be able to build relations with the citizens through government online channels. CRM was re-known as CzRM (Citizen Relationship Management) within e-Government literature (Larsen & Milakovich, 2005). In CRM the customer is an individual with a unique set of interests and needs, he/she has the right to customized, quick and convenient service. Self-service technologies give today's customers the option of having their needs met at their leisure through, for example online banking or EC, nevertheless governments by the implementation of e-Government are attempting through the use of ICT and through e-Government channels to adopt CRM ideas as well as meeting the citizens' expectation of the provision of quality service.

B) People, business and e-Society pressure as a driver for e-Government: A different argument highlights that the driver behind e-Government was the need to respond to the growing pressure on governments from the e-Society. In the private sector, research surveys suggest that customers achieve high levels of satisfaction from EC vendors. Consequently the consumers of public services are starting to demand the same level of responsiveness and service from their governments as they expect from the private sector (Edmiston, 2003). Jackson et al., (2003) explains that administrations, councils, ministries have a different structure yet they try to keep up with businesses, other agencies and citizens' expectations and needs, also they try to obtain what is suitable for them from EC applications to improve to improve their status.

Ho (2002) argues that the rise of EC technologies not only had put pressure on governments to apply new methods that people are using to interact with businesses, EC has influenced the public sector by its promise of commercial and cost befit advantages, efficient time saving and good servicing which customers are benefiting from by electronically interacting with businesses; therefore e-Government came from a commercial and cost benefit prospective (Schoeniger, 2000). Ho & Ni (2004) in their paper "Explaining the adoption of e-Government features A Case Study of Iowa County Treasurers Offices" which indicates that one of the main drivers for

implementing e-Government showed in figure 2.5 is to respond to external constituency pressures.

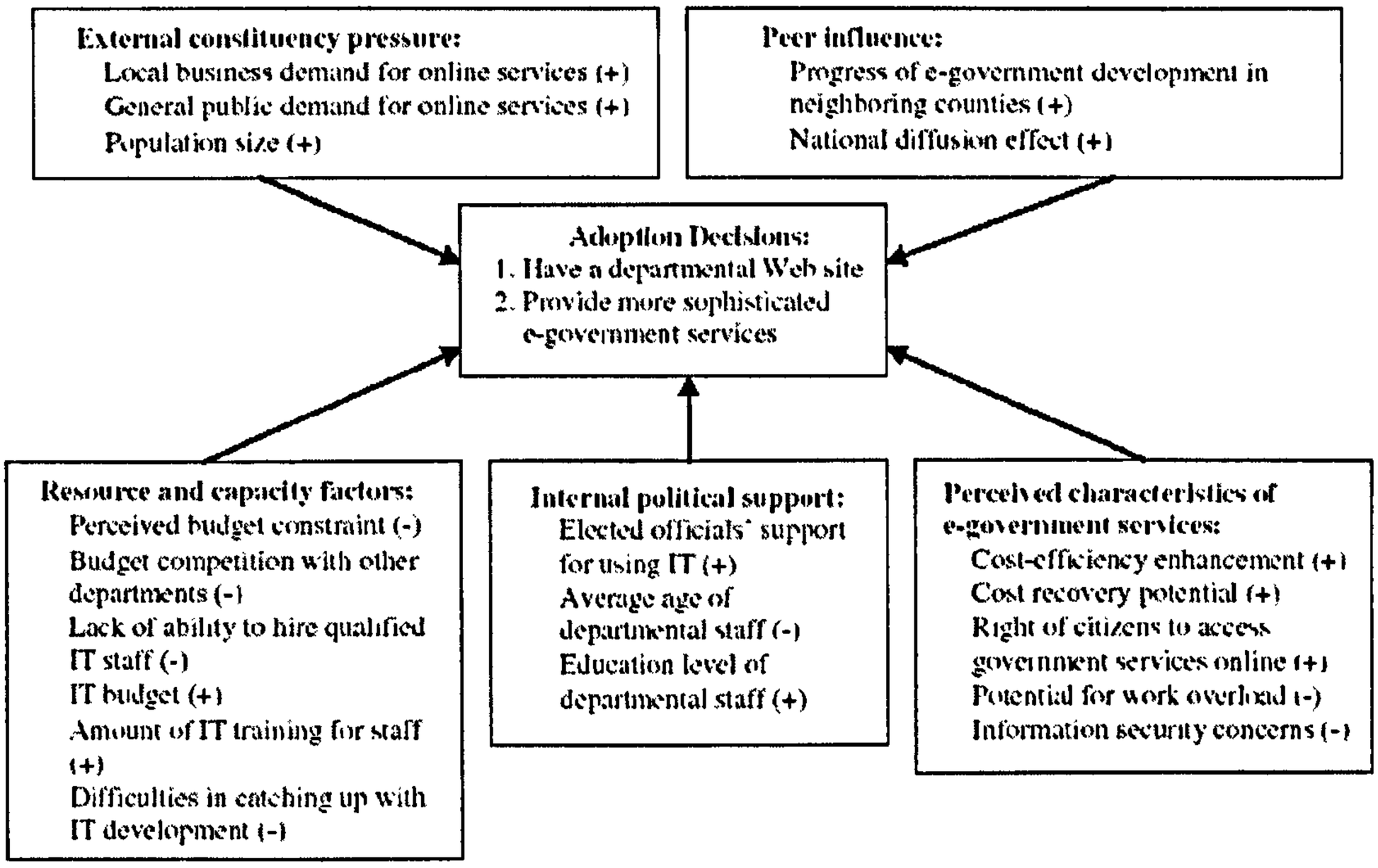

Figure 2.5: Framework for analyzing adoption of e-Government features. Ho & Ni (2004)

2.9.2 The Followers

These are developed countries which implemented e-Government between the years 1996-2000 following the USA, Australia and Scandinavia. The reasons behind their implementation was their realisation of the benefits of e-Business and EC including cost reduction, time saving, better communication, customer reach and interaction (Giaglis, 1999), influenced by the growing amount of academic literature highlighting the benefits of e-Business and EC applications. Furthermore followers wanted to catch up with the early adopters of e-Government projects and by the mid and late 90's e-Government initiatives had started up in many countries including Germany 1996, Spain 1998 and Italy1999 (Strejcek & Theil, 2002).

Schedler & Summermatter (2003) in their review of e-Government motives in 7 European countries found that the main driver behind implementing e-Government projects in those countries was to obtain efficiency gains which would improve process and would bring savings to the public sector agencies with 49% of projects having this as the main driver behind their implementation, customer demand came in

second place with 39% and the contribution to e-Society which would enhance democracy and respond to people's needs came third by 28%. Nevertheless as opposed to developing countries that were lacking a good image and legitimacy, image improvement scored the least as a driver for implementing e-Government projects in the countries reviewed with only 6%. Figure 2.6 shows Schedler & Summermatter findings.

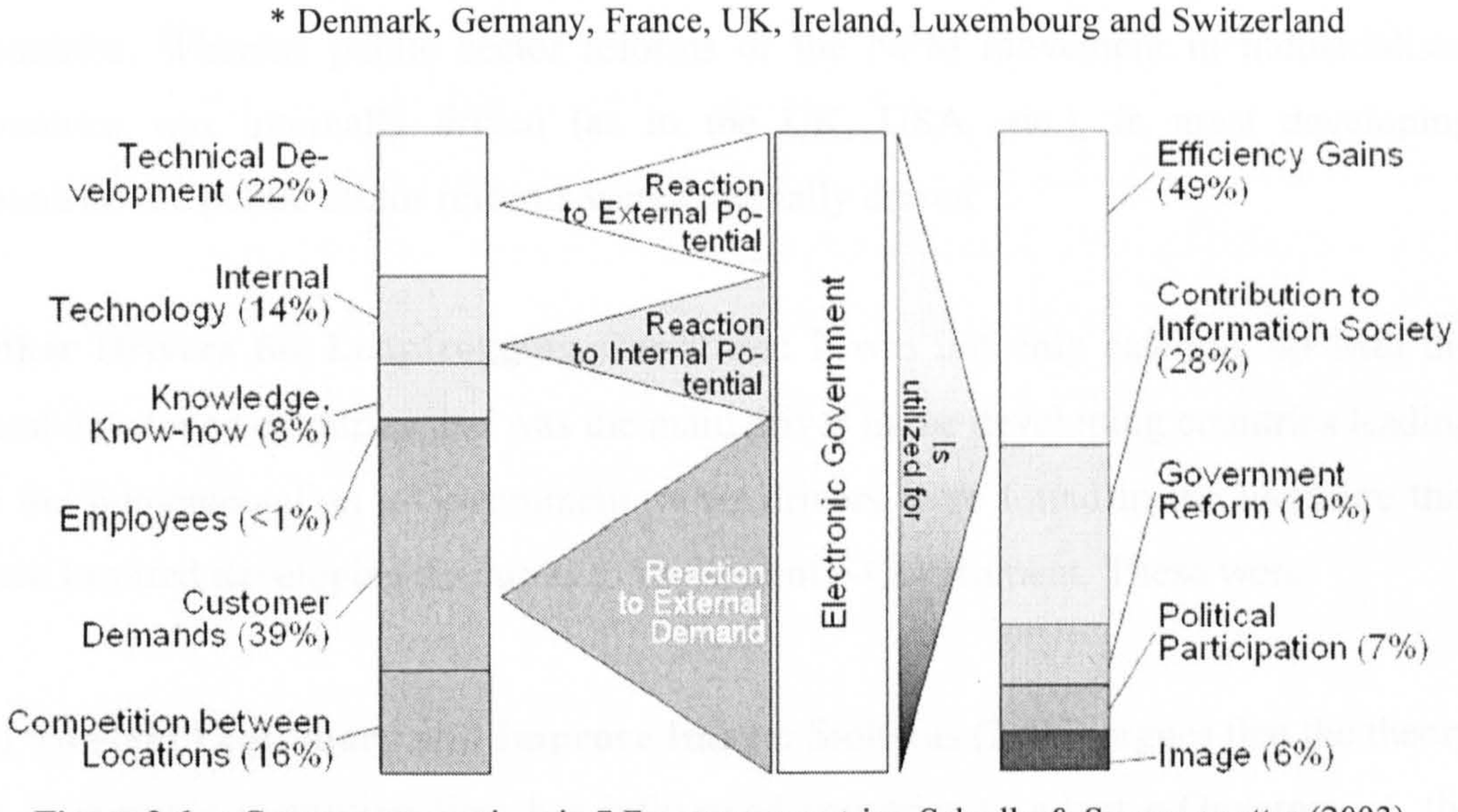

Figure 2.6: e-Government motives in 7 European countries. Schedler& Summermatter (2003)

2.9.3 Leapfrog Countries

These are developing countries adopting e-Government after the year 2000, Howard et al., (2001) mentions that in spite of the newness of the concept of "e-Government" in relation to the history of democratic governance, e-Government is quickly becoming ''simply the way things are done'' in technologically advanced nations. Most of the developing countries after the year 2000 started to be influenced by developed countries who had implemented e-Government, believing that adopting it would provide a magical solution for their existing problems (Basu, 2004). e-Government with its promises can overcome hierarchies, tackle corruption, enhance process, modernise the public sector and move the society to the digital era.

This process of countries catching up with early adopters of e-Government is often known as leapfrog. However, in the case of a leapfrog e-Government it is not business driven to meet the needs on governmental agencies. I nstead it is technologically

driven. What most of the developing countries did not recognise is that developed countries which announced e-Government projects were already involved in a democratic process, reform and were applying new managerial methods in their public sector to achieve maximum benefits, also these countries were responding to their people's and businesses' needs. Consequently the adoption of e-Government was compatible with these countries' public, social and commercial needs. Saxena (2005) says "Implications of e-governance are slightly different for developing countries. Whereas public sector reforms or the NPM movement in industrialised countries was internally driven (as in the UK, USA, etc.), in most developing countries the public sector reforms were externally driven".

Other Drivers for Leapfrogging Countries: It was not only catching up with the most developed countries that was the main driver in the developing countries leading to the implementation e-Government, other drivers were found in the literature that have inspired developing countries to implement e-Government. These were:

A) To Gain Legitimacy and Improve Image: Stoltzfus (2005) argues that the theory of isomorphic institutionalism has influenced countries to adopt e-Government, the theory created by Powell & DiMaggio (1991) suggests that Nation-states compete for power and legitimization when adopting large-scale technological programmes like e-Government and through this competition become more similar (Monir & Rahaman, 2002). The rationale for implementing e-Government may be embedded in a nation's need to remain legitimate or progress to a place of legitimacy, this will be more evident in countries which lack democratic systems, therefore the act of implementing e-Government can in and of itself communicate an empowering image of influence, power and legitimacy to its citizens (Gupta & Jana, 2003). By implementing e-Government developing countries can stand in pride in front of their people and demonstrate to them that they are applying the most modern technologies in their governmental systems in order to serve the people, also to prove to them that their governments are able to go compete with developed and democratic nations. A research on Iran conducted by Sharifi & Zarei (2004) concluded that e-Government has improved Iran's image on a national level and brought Iran closer to many developed world countries.

B) Poor Developing Nations Seeking Aid: In most developing countries the public sector reforms are externally driven by the World Bank and other donor institutions (McGill, 1997), since e-Government projects are reform tools with plenty of promises for the public sector, the economy and the people and also because it will help enhance democracy, not forgetting e-Government projects require necessary financial and staffing resources and having a stable technical infrastructure (Basu, 2004). Western governments and the World Bank are willing to financially support developing countries with their e-Government projects.

e-Government programmes in Jordan, Macedonia , Giurgiu and other countries have received financial backing to support their programs through USAID[8] which is a US governmental donor (REACH, 2004). The World Bank, with the cooperation of the Centre for Democracy and Technology, has created a comprehensive "Best Practices" handbook outlining the steps needed for developing countries to begin their own e-Government programmes (Stoltzfus, 2005). Turkey, Estonia and India are examples from the many developing countries which are getting support from the World Bank to implement e-Government Projects.

2.9.4 Opportunists Countries

Are developing countries with capabilities (economic, population) such as China, Iran and others implemented e-Government for specific economic giants and managerial requirements. Opportunist countries, which are different from leapfrogging countries, understood what they needed from e-Government and implemented it based on their countries' requirements. For example while Chinese leaders also emphasize the importance of providing a better quality of service to their citizens, the major goal of e-Government seems to be interestingly different from in Western Countries. In China, the focus of e-Government has mainly been on "administrative reform" compatible with central government control over China. Table 2.1 distinguishes e-Government drivers and goals between the USA and China, where citizen's and business's concerns are clear and apparent in the USA's e-Government project. However in China e-Government developed fitting in within the existing centralized

[8] The United States Agency for International Development (or USAID): Is the U.S. government organization responsible for most non-military foreign aid, It advances U.S. foreign policy objectives by supporting economic growth, agriculture and trade; health; democracy, conflict prevention and humanitarian assistance.

government where it will improve the government's power while neglecting the democratic goals of e-Government.

Table 2.1: e-Government purpose in USA and China. Ma et al. (2005)

Why e-government? (purposes)	
United States—Management reform	China—Administrative reform
1. Improving efficiency of government agencies - reduce costs and layers of organizational processes - restructuring the relationship among state, business, and citizens (more transactions among them) - "One-stop" shopping 2. Improving government to business (G2B) - reducing friction of G2B interactions - procurement - streamline compliance practices 3. Improving service to citizens and enhancing governance - citizen-centric e-government - empowers individual citizens - increase social inclusion and citizen participation - enhance open communication, transparency, and democratic accountability	1. Accelerating administrative reform - transformation of government functions - reengineering government processes - enhancing transparency 2. Promoting economic development - stimulate economic progress - attracting more foreign direct investment (FDI) 3. Increasing the supervising capacity of the Central Government - strengthening surveillance and monitoring - putting the local government under the central authority

2.9.5 Outline of the Drivers of e-Government Projects

Drivers of e-Government are different from country to country. Countries around the world could be categorised into 5 main groups based on the drivers of their e-Government projects:

1- Leaders: Developed countries such as the USA and Australia and parts of Europe where e-Government came as an evolution of managerial principles (NPM and CRM) within the public sector. However, citizens and private sector demand for online applications are believed to also have influenced leading countries to adopt e-Government.

2- Followers: Developed countries catching up with the leaders, also these countries would like to benefit from ICT and EC benefits within the public sector.

3- Opportunists: Developing countries with significant capabilities and emerging economies, who would like to benefit from e-Government in a such a way that it serves existing practices.

4- Leapfrog Countries: Developing countries with limited capabilities which would like to achieve benefits from e-Government promises, they also adopt

e-Government for different political benefits, such as to improve their image, seek international aid and legitimise their existence.

5- Stars: Developing countries or emerging economies with technology friendly societies. ICT has been part of their national strategy for a long time and they have successfully implemented e-Government to improve their public sector in relation to their social and economic needs. Examples include Singapore, South Korea, Taiwan, Malaysia and other East Asian countries.

2.10 Summary

e-Government was originally developed as an extension to the use of ICT in addition to the global electronic boost within the public sector in the early 1990's similar to the rise of different high-tech concepts during that period including EC, e-Business, e-Learning (Jaeger, 2003). ICT provided transparent democratic countries involved in NPM with the tools to enhance their customer reach and reform their processes that led to the birth of the e-Government concept. e-Government in many cases has various similarities to EC, although many differences exist. There are plenty of stakeholders for e-Government and plenty of benefits that could be achieved for each stakeholder if e-Government is effectively implemented (Teicher et al., 2002; Leitner 2003; Saxena, 2005).

Currently most if not all countries around the world are involved in different types of e-Government projects (Siau & Long, 2006). Nevertheless, although most e-Government projects strive to achieve similar goals and benefits variations do exist in the performance and development of each e-Government project based on a country's profile and history (Basu, 2004; Chen et al., 2005; 2006). Jordan's profile and e-Government project history classifies it as a leapfrog country which saw in e-Government a chance to reform the country (MoICT, 2006) and may be improve its image and gain international support. This might effect the Jordanian e-Government deployment and delivery since drivers behind its implementation do not seem purely process driven. Furthermore Jordan may not recognize the level of change and recourses required to achieve the scale of the radical transformation brought to their public sector by implementing e-Government Projects. This however will be uncovered thought this research when investigating if there is a gap between supply and demand on e-Government in Jordan.

Chapter 3

Research Methodology

3.1 Introduction

This chapter explains the issues related to the research methods used in this thesis. Firstly a review of existing research methodologies and philosophical assumptions will be explained. Following the Chapter will examine the chosen methodological approach for the research and its justification of use. The select methodology has been the multi-method approach which refers to the use of typical quantitative and qualitative methods together when conducting research (Creswell, 2003). Other terms equivalent to multi-method approaches are mixed method studies and multi methodology (Mingers & Gill, 1997). The chapter will also discuss the research questions and structure in addition to data collection methods. Finally the chapter will clarify the research validity and reliability.

3.2 Research Methods

3.2.1 Quantitative Methods

Quantitative research methods were initially found in the natural sciences to study natural phenomena. Conventional science implements the assumption that there is a real world, which contains objects and processes (Myers, 1997). By the observation of the real world, theories were formed as to how it came to be the way it is and how and why the processes take place. Quantitative research involves the use of structured questions where the response options have been fixed and a large number of respondents are involved. By definition, obtained findings must be objective, quantitative and statistically valid. Simply put, it's about numbers, objective hard data. (Maxwell, 1998) states "In general, quantitative methods can be used to draw statistical inference that is, drawing empirical conclusions about an entire population based on a sample".

In applied sciences such as IS it is very common to refer to and depend on theories to investigate whether the theory has the capability to explain, describe and predict the behaviour of the real world; it is necessary to construct tests of the inferences arising from a theory (Clarke, 1994). In order to essentially carry out tests it is necessary to express them in 'operational' terms, in the form normally referred to as hypotheses. Some examples of quantitative methods which are now well acknowledged in the social sciences include different survey methods, laboratory experiments, formal methods (e.g. econometrics) and numerical methods such as mathematical modelling (Myers, 1997).

3.2.2 Qualitative Methods

Qualitative research methods were originally founded in the social sciences to enable researchers to investigate different social and cultural phenomena. According to Myers (1997) qualitative research methods are designed to help researchers understand people and the social and cultural contests within which they live. "Qualitative methods are valuable in the exploratory phases of a research project, where it is expected that they will often help to illuminate or even set the research question, aid conceptualisation and generate hypotheses for later research" (Murphy, 1980). According to Strauss & Corbin (1990) qualitative research means "any kind of research that produces findings not arrived at by means of statistical procedures or other means of quantification". Qualitative research entails the use of qualitative data, such as different types of interviews, documents and participant observation data, to identify and give an explanation of a social phenomenon. Kaplan & Maxwell (1994) argue that the goal of understanding a phenomenon from the point of view of the participants in the research and its particular social and institutional context may be lost when textual data are quantified; where quantitative researchers seek causal determination, prediction and generalization of findings, qualitative researchers on the other hand seek instead illumination, understanding and extrapolation to similar situations. In conclusion Maxwell finds that qualitative analysis results are a different type of knowledge that will yield different results from quantitative inquiry.

3.3 Philosophical Perspectives

All research (whether quantitative or qualitative) is based on some fundamental assumptions, the most valid philosophical assumptions being those which relate to the underlying epistemology which directs the research (Myers, 1997). Epistemology refers to the assumptions about knowledge and how it can be obtained (Hirschheim, 1992). (Orlikowski & Baroudi, 1991; Myers, 1997) classify underlying epistemology as: (1) positivist research, (2) interpretive research and (3) critical research. There is a growing dispute as to whether one of these categories should be used on its own or whether more than one should be used in a particular piece of research. What determines it all however, is our way of thinking, sometimes labelled as our epistemology or paradigm, that predisposition we all have about what stands for truth. In general, those of us with an interpretive or critical theoretical epistemology are drawn to confident methodologies (e.g., evaluation, ethnography, narrative, action research, case study, phenomenology), while those among us with a positivist mindset are more comfortable employing quite different approaches (e.g., experimental, correlational, causal-comparative, survey) (Lapan, & Quartaroli 2005). Not surprisingly action research can be positivist (Clark, 1972), interpretive (Elden & Chisholm, 1993) or critical (Carr & Kemmis, 1986).

3.3.1 Positivists

According to Myers (1997) positivists generally presumes that reality is objectively given and can be described by measurable properties which are self-determined of the researcher and his or her instruments. Positivist studies in general try to test theory in an effort to increase the understanding of phenomena. In line with this Orlikowski & Baroudi (1991) classified IS research as positivist if there was evidence of formal propositions, quantifiable measures of variables, hypothesis testing and the drawing of inferences about a phenomenon from the sample to a stated population.

3.3.2 Critical Research

Critical research is based on critical theory, which in sociology and philosophy is the shorthand for "critical theory of society" or "critical social theory". Critical

researchers assume that social reality is historically constituted and that it is produced and reproduced by people (Myers, 1997). Although people can deliberately act to alter their social and economic circumstances, critical researchers recognize that their ability to do so is constrained by various outlines of social, cultural and political domination. The main task of critical research is seen as being one of social critique, whereby the restrictive and alienating conditions are brought to light (Myers, 1997). Examples of a critical approach to qualitative research in IS research include the works of (Lyytinen & Hirschheim, 1988; Hirschheim & Klein, 1994; Vickers, 1999) where IT methodological development is considered from a critical, anti-positivist perspective.

3.3.3 Interpretive Research

Interpretive research holds today a position within the IS community as a reliable approach aimed at producing an understanding of the context of IS and the process whereby the information system effect and is effected by the context (Walsham, 1993). Interpretive research does not set hypothesis and predefine dependent and independent variables rather conducting an investigation, focusing on the full complexity of human sense making as the situation emerges (Kaplan & Maxwell, 1994). Five other common assumptions identified by Candy (1991) that are found to be shared by interpretive researchers include (Ng'ambi, 2004):

1. An event or action is explainable in terms of multiple interacting factors, events and processes. Causes and effects are mutually interdependent.
2. The extreme difficulty in attaining complete objectivity, especially in observing human subjects who function on their individual systems of meaning.
3. The aim of inquiry is to generate an understanding of individual cases, rather than universal laws or predictive generalizations.
4. The world is made up of tangible and intangible multi-faceted realities. Therefore they are best studied as a whole rather than as pieces of dependent and independent variables.
5. Inquiries are always value laden and inevitably influence the framing, focusing and conduct of research.

3.4 Characteristics of e-Government Research

Before choosing the most appropriate research method for this research, it is essential to understand the characteristics of e-Government in order to justify its use. The following points will highlight the main characteristics of e-Government research:

A) e-Government is a New Topic: e-Government is described as a new research topic with many scholars describing it as being an emerging phenomenon. Hackney et al., (2005) state "electronic government is a burgeoning phenomenon", Siau & Long (2005) say "e-Government is a new area and there are many research opportunities", Ebrahim & Irani (2005) state "Since e-Government is a relatively new research area, its architecture and adoption strategy have not been widely discussed in the literature".

B) e-Government is a Multidisciplinary Research Area: e-Government is a vast area of research. It involves many stakeholders. McNeal, et al., (2003) describe e-Government as involving "thinkers and strategists in multiple segments of industry and academia". Dufner et al., (2002) identify e-Government as a multidisciplinary research domain that has multiple threads with many stakeholders; this recognizes that it gives rise to a rich area of interest to analysts from a wide variety of disciplines. Dawes et al., (2004) state "it is truly multidisciplinary, not only in the sense that it funds research in many different disciplines, but more important that it encourages research that combines disciplines."..."DG (Digital Government) supports theoretical and applied research, generating new knowledge and attacking important problems".

C) e-Government is a Complex Topic: Technology, ICT, political science, management, development, and social science correlate, overlap and interact when researching the topic of e-Government. Gil-Garcia & Pardo (2006) state "e-Government is not a unidimensional phenomenon and researchers must understand complex and recursive relationships between factors related to technology, management and policy". Nevertheless, the complexity of e-Government also extends beyond the e-Government concept to include sub-concepts of e-Government. Ndou (2004) for example identifies four main aspects of service provision within e-Government: these are e-administration, e-services, e-Democracy and e-Society; each

of these aspects, which is part of the e-Government provision, contains plenty of topics, stockholders and research areas.

D) e-Government not a Well Defined Topic : Information obtained to construct the literature available on e-Government by researchers was mainly put together from similar and overlapping concepts such e-Business, e-Services and electronic commerce (EC). Ebrahim & Irani (2005) state "Therefore, the authors review and study these concepts (e-Government) from other relevant areas such as e-business, e-services and e-commerce". Consequently this has led to different understanding of e-Government and resulted in the existence of a number of definitions for it. Gil-Garcia & Pardo (2006) said "Electronic government or digital government is not a simple or well-defined theoretical construct. It can be understood as anything from online services only to any information and communication technology used by government". Gil-Garcia & Pardo (2006) point out that there are at least three different approaches to understanding e-Government within academic literature.

E) The need of Research Within e-Government: Different areas of e-Government still require a substantial amount of research. Some scholars (Doty & Erdelez, 2002) describe the existing research on e-Government as being sparse or describe it as being in its infancy (Siau & Long, 2005). On the other hand other scholars describe existing literature on e-Government as being healthily increasing in volume. Norris & Moon (2005) say "there is a growing body of e-Government literature, little of it is empirical", Siau & Long (2005) state "A number of studies have been commissioned by the United Nations and these studies present a rich ground for mining data". Still it is claimed that this existing amount of well established literature is contradicted because of its research methods; existing e-Government literature mostly depends on qualitative research methods which are excellent to use when exploring new fields of knowledge (Creswell, 1998). Nevertheless, most of these qualitative researches were not quantified to be representative. Also each country around the world has its unique social, economical, cultural and political issues; this makes the generalization of research results applicable only to any country with similar characteristics. McGregor & Holman (2004) describe existing research on e-Government by stating "Much of the existing research literature on e-Government at the federal, state and local levels is

largely descriptive of the activities and initiatives that are underway and offers recommendations based on the experiences of specific e-Government projects".

3.5 Choosing the Best Methodology for the Research (multi-method)

The differing potential, advantages and disadvantages of quantitative and qualitative research methods meant that it was necessary to conduct an in-depth investigation in order to choose the most appropriate method for this research. Although most researchers perform either quantitative or qualitative research work, single method research is only suitable to understand specific aspects of e-Government and IS in general. Scholars from different disciplines recommend the use of multi-method approaches (combined qualitative and quantitative) to research complex emerging phenomena (Myers, 1997; Creswell, 2003; Green & Preston, 2005; Sammons et al., 2005). Tashakkori & Teddlie (1998) define this type of research by saying "Mixed methods combine qualitative and quantitative approaches in the methodology of a study (such as in the data collection stage)". Jick (1983) refers to multiple methods as triangulation which is "largely a vehicle for cross-validation when two or more distinct methods yield comparable data". Brewer & Hunter (1989) say "...actual multi-method projects are either single studies or more complex programmes of continuing research, which systematically employ various combinations of field, survey, experimental and non reactive methods to address their research questions".

In the case of this research there is very little academic literature and research investigating "The existing gap between supply and demand in e-Government". Moreover there is no literature surrounding the issue in the developing countries. In addition to that, the previous review of the characteristics of e-Government research demonstrated that it is a recent, multidisciplinary complex and not a well defined topic, with not enough literature back ground on the topic. Multi-method, sometimes called mixed methodology, therefore is the most appropriate method to be used in this research. Multi-method research was found to be widely used in previously published e-Government research. Heeks & Bailur (2006) in their paper "Analysing e-Government Research: Perspectives, Philosophies, Theories, Methods and Practice" which reviewed 84 e-Government publications indicated that conducted e-Government research in general proved to not have a clear research methodology.

However, 12% of the 84 reviewed researches used a combination of quantitative and qualitative methods which adds external validity to the research when using quantitative methods (Heeks & Bailur, 2006). Gil-Garcia & Pardo (2006) in their published paper titled "multi-method Approaches to Digital Government Research: Value Lessons and Implementation Challenges" highlight issues related to multi-method methodology when researching e-Government indicating that multi-method methodology seems to be the most appropriate method for researching e-Government.

Advantages of Multi-Method Approaches: As discussed not only is the multi-method approach the most suitable for to investigating and researching multi disciplinary, complex and emerging topics, but the multi-method approach also has the following strong points:

1- A more comprehensive approach to the phenomenon. It helps to obtain full answers and increase the robustness of our understanding (Gil-Garcia & Pardo, 2006).
2- Validates methods. Weaknesses of individual methods are identified and partially solved by using multiple methods within a single study (Creswell, 2003).
3- Provides the potential for better integration of contributions from multiple disciplines, as well as the opportunity to feed back more directly into the disciplines themselves (Hoyles et al., 2005).
4- Provides the potential to discovering new or paradoxical issues that could promote future research (Hoyles et al., 2005).
5- Allows the examination of different facets of a phenomenon and can also help to discover contradictions (Greene & Preston, 2005).

3.6 Research Objectives and Research Questions

The research objectives that guide this study were developed to fill the gaps in the existing literature and research, in particular, the lack of a comprehensive e-Government research that examines the gap between e-Government supply and demand. What makes the research more pioneering is that it is conducted in a developing country; this brings more insight to e-Government practices within developing countries since most of the existing literature is based on e-Government

practices within developed countries. Figure 3.1 presents a simple illustration of supply/demand gap problem.

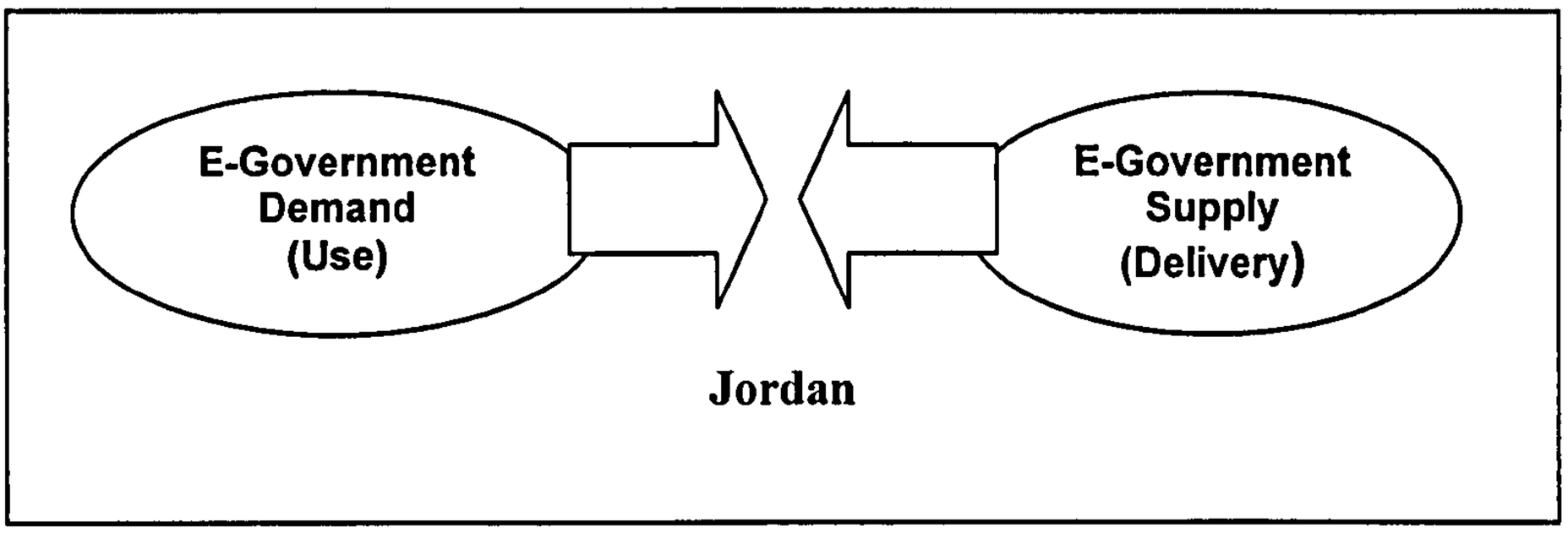

Figure 3.1: Identifying the gap

In order to answer the question,' **is there a gap between supply and demand of e-Government in Jordan'**, the formulation of the following research questions was created:

1- How e-Government is successfully implemented in a country? What are the requirements and practices that are needed?
2- What is the actual demand for e-Government within the Jordanian population?
3- Are there factors that encourage people to use e-Government in Jordan and what are they?
4- What is the government of Jordan promising to deliver by e-Government to people and how is Jordan doing so far?
5- What type of services is the Jordanian Government delivering online and are they well constructed and responsive?
6- Does government supply of e-Government comply with citizens' demand and needs?

The reasons why these questions were constructed are:

- **Objective 1** will enable the researcher to understand the e-Government topic from a wide perspective and it will enable him to observe, analyse in addition to conclude problems connected to the delivery of e-Government in Jordan in further stages of the research.

- **Objective 2 and 3** will measure the actual demand for e-Government services levels from citizens in Jordan and it will explore what factors are important to increase the demand level in order to bridge the gap between supply and demand.
- **Objective 4** will bring an insight into the goal of e-Government in Jordan and the people's position within these goals and it will bring an understanding of the current implementation, practices and problems within e-Government implementation in Jordan.
- **Objective 5** will measure the actual supply level of e-Government services to people and will assess how well government online services are constructed to respond to different people's needs.
- **Objective 6** will determine if there is a gap between supply and demand of e-Government services in Jordan. This will be assessed based on findings that evaluated the supply and demand of e-Government in Jordan.

3.7 Research Plan

In order to provoke answers which will answer our question concerning "the gap between government and people in Jordan", the research will be constructed using the following steps:

1- Create a generic e-Government model

- The model will present steps for successful implementation of e-Government.
- The model will bring understanding of e-Government requirements.

2- Measure the demand side of Jordanian e-Government

- Measure the actual demand on different levels of e-Government services and test hypothesised factors influencing demand (people's needs) on e-Government demand (online survey).

3- Measure the supply side of Jordanian e-Government

- Measure government intended and achieved delivery of e-Government services (Document Analysis).
- Measure actual government service delivery to citizens (Website Analysis).

4- Discusses research findings with people responsible for deploying e-Government

- This will add validity to findings and give more understanding to the gap problem.

Figure 3.2 represents the flow of this research:

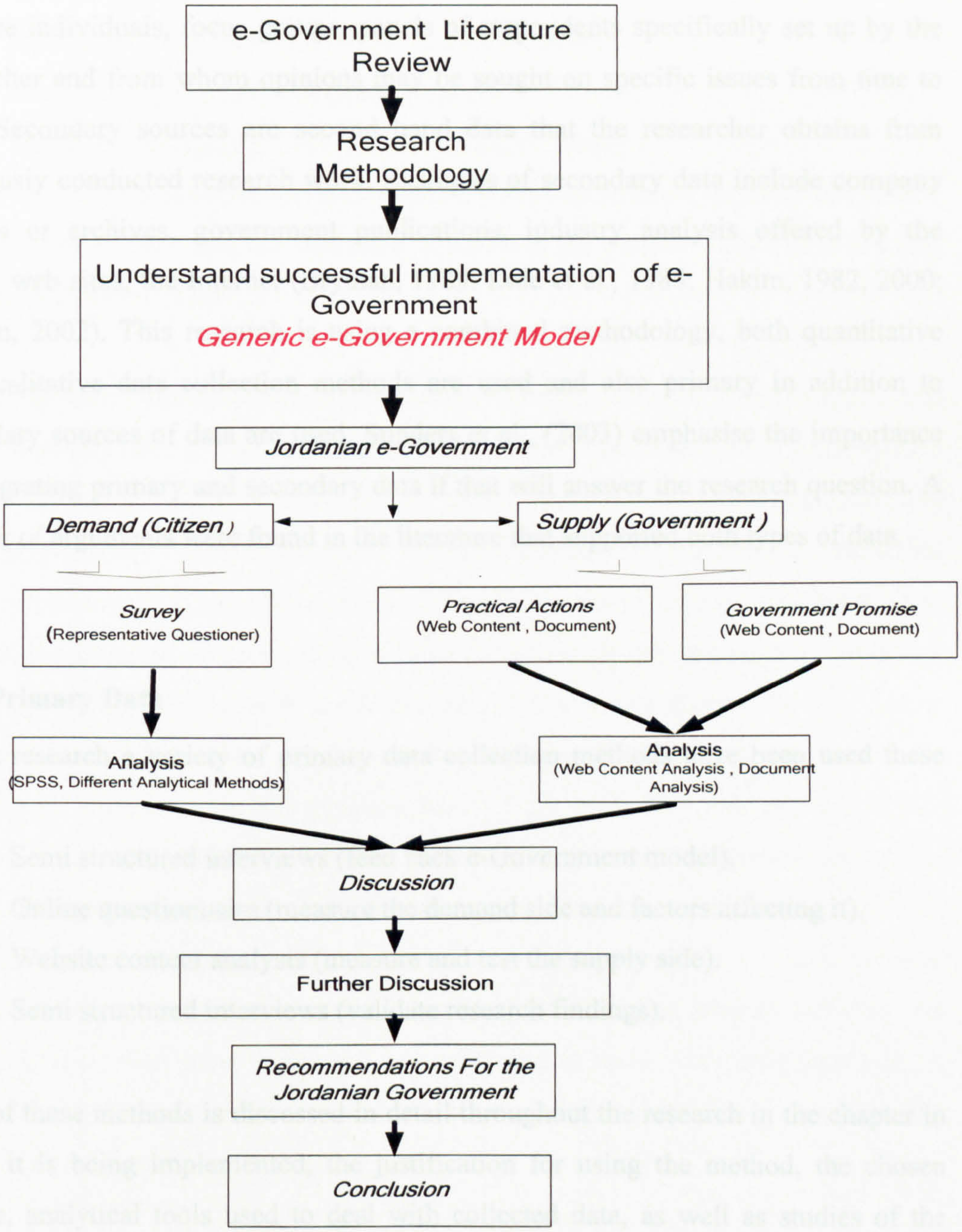

Figure 3.2: Research plan

3.8 Sources of Data

Data can be obtained from primary or secondary sources (Sekaran, 2002). Primary data refers to information obtained firsthand by the researcher on the variables of interest for the specific purpose of the study. Some examples of sources of primary data are individuals, focus groups, panels of respondents specifically set up by the researcher and from whom opinions may be sought on specific issues from time to time. Secondary sources are second hand data that the researcher obtains from previously conducted research work. Examples of secondary data include company records or archives, government publications, industry analysis offered by the media, web sites, the Internet (Bryman, 1989; Dale et al., 1988; Hakim, 1982, 2000; Robson, 2002). This research is using a combined methodology, both quantitative and qualitative data collection methods are used and also primary in addition to secondary sources of data are used. Sunders et al., (2003) emphasise the importance of integrating primary and secondary data if that will answer the research question. A number of arguments were found in the literature that supported both types of data.

3.8.1 Primary Data

In this research a variety of primary data collection methods have been used these were:

1. Semi structured interviews (feed back e-Government model).
2. Online questionnaire (measure the demand side and factors affecting it).
3. Website content analysis (measure and test the supply side).
4. Semi structured interviews (validate research findings).

Each of these methods is discussed in detail throughout the research in the chapter in which it is being implemented, the justification for using the method, the chosen sample, analytical tools used to deal with collected data, as well as studies of the reliability and validity of the method are included.

3.8.2 Secondary Data

Sunders et al., (2003), says "Secondary data includes both quantitative and qualitative data and they can be used in both descriptive and explanatory research". In this research secondary data of all types was used to:

1. Review existing literature related to e-Government
2. Construct a generic e-Government model
3. Measure the supply side of e-Government in Jordan
4. Construct data collection instruments (Survey questioner, Website analysis).

Sources of secondary data are described in detail in the chapter in which it is being used throughout the research.

Reliability and Validity of Secondary Data: Stewart & Kamins (1993) suggest that using secondary data in research is an advantage over researchers using primary data because the data you wish to obtain already exists. The time you spend evaluating any potential secondary data source is time well spent, as rejecting unsuitable data earlier can save much wasted time later!, such investigations are even more important when you have a number of possible secondary data sources you could use. Although secondary data seems to have some advantages this is not always the case; some sources of secondary data are inaccurate, also some of its outputs cannot be generalized. To overcome this problem most of the secondary data sources in this research were extracted from official international journals, published conference papers, government publications, books and international reports. Dochartaigh (2002) and others refer to this as assessing the authority or reputation of the source to increase the validity and reliability of secondary data. Data published on Internet websites was employed at a lower level to be used as a reference to resolve research questions. A few Jordanian Government websites have been used as a data source to review the progress of e-Government in Jordan.

3.9 Validity and Reliability of the Research

Internal validity is the process of ruling out rival explanations for the phenomenon under investigation. The reliability of a research instrument concerns the extent to

which the instrument yields the same results on repeated trials. In order to achieve high levels of validity and reliability certain measures must by carried out. These are:

1- To make sure that data collection methods (Survey, Content analysis, Document Analysis) are valid and reliable to a maximum level possible. This will reflect on the research results overall.
2- Using more than one research method further confirms the findings as it results in triangulation of the data. Triangulation is achieved in this dissertation by gathering data about the same projects in different ways (Strauss & Corbin, 1998).
3- Threats to validity can be tackled not only by the appropriate methodology, but also by providing evidence that rules out alternative interpretations and explanations so that any threats to the validity of the research are made implausible.
4- A survey to measure the demand side (citizens) was done in a quantitative representative sample to maximise the external validity of this sample to be generalized into the Jordanian population.
5- Use e-Government literature as the main source of information reference most of this research work (Heeks & Bailur, 2006).

Threats to External Validity: The external validity or generalisation problem is perceived differently in e-Government research since every country has its unique culture, economy and population. In the case of Jordan the data used to measure the problem "the gap between government and the people" was obtained in a quantitative method (online questionnaire) to measure the demand side of e-Government, qualitative to quantify (website content analysis) was used to measure the Jordanian Government actual supply of e-Government. The use of more than quantitative method makes it possible for the findings of this research to be generalized and be valid for external validity within Jordan. For other countries involved in e-Government projects, outputs of the research could be generalized to include them depending on the profile of the country. For example for a developed country with a high population and democratic governance system the outputs of this research are very unlikely to be applicable although some patterns and recommendations could be adaptable. Nevertheless countries with a similar profile to Jordan (small population,

developing economy, partly democratic…est.) such as Tunisia, Lebanon…est., could benefit significantly from the research outputs.

3.10 Overview on Sources of Data throughout the Research

Heeks & Bailur (2006) when reviewing the existing characteristics of e-Government research, indicated the weakness of most of the existing research and recommend

> "Use of a broader range of research methods in order to develop a richer range of data on e-Government. This means moving away from the dominance of "hunt and peck" and personal reflections to greater use of both "traditional" methods such as interviews, surveys and observation; plus others such as participant observation, content analysis and critical incident technique".

Following their advice in order to achieve high quality, reliability and validity levels there has been a wide range of primary and secondary data used in this research as discussed in the previous sections in this chapter. Table 3.1 summarises data collection methods used throughout the research.

Table 3.1: Summary of research methods

Ch.	Data Provider	Data Required	Collection Method	Type Of Data
4	e-Government Publications	(e-Government Model) General understanding of e-Government	Document Analysis	Secondary
4	e-Government experts	Testing the e-Government Model	Semi-Structured, in depth interviews	Primary
6	Jordanian population	Feed back on Pilot Survey	Online Questionnaire	Primary
6	Jordanian population	Measure the demand side of e-Government	Online Questionnaire	Primary
7	Governmental Documents	Measure the announced supply-side of e-Government	Document Analysis	Secondary
8	Governmental Websites	Measure the actual supply side of e-Government	Website content Analysis	Primary
9	Jordanian public sector IT Mangers and employees (N =10)	Validate findings, Better understanding for the problem	Semi-Structured interviews	Primary

Ch. = Chapter

3.11 Philosophical Prospective Used Throughout the Research

The research question which guides the study requires multiple data to be collected from different sources using several methods in what is called multi-method. The use of multi-method has reflected on the use of a variety of philosophical perspective through out the research. For example in Chapter 4 when constricting the generic e-Government model, critical and interpretive philosophical prospective has been deployed in order to try and construct theory for the topic adding. In Chapter 5 and 6 when measuring the demand side of e-Government by using the online questionnaire which would examine people's demand level on e-Government in addition to people's hypothesised needs, positivistic research is the dominant philosophical approach. Chapter 7 examines Jordan's deployment of e-Government and response to citizens needs using critical and interpretative approach. Chapter 8 conducts the website content analysis to measure the Jordanians Government actual supply of e-Government using a positivistic philosophical approach. In Chapter 9 when discussing research findings with the Jordanian officials using qualitative interviews interpretive arises again as a philosophical prospective in that chapter.

Generally speaking some scholars criticise critical philosophical prospective in research for not trying to predict or explain the status quo, but to understand what the inherent struggles, contradictions and sources of alienation within society or an organisation are and to do something about them (Avgerou, 2005), others scholars criticise the positivists approach to being particular in the assumption that institutions are capable of fixing the behavior of the individuals within them, instead of being also a product of that behaviour (Yin, 1994). Using multiple sources of data overcomes the weaknesses of different philosophical approaches by integrating them in solving the research problem.

3.12 Ethics in the Research

Many lecturers emphasise the importance of ethics in the research, there are a number of key expressions that describe the scheme of ethical protections that the contemporary research establishment have created to try to better protect the rights of their research participants. The principle of voluntary participation requires that

people not be coerced into taking part in the research. This is especially relevant where researchers had previously relied on "captive audiences" for their subjects in prisons, universities, schools and workplace. Directly related to the notion of voluntary participation is the requirement of informed consent. Basically, this means that prospective research participants must be completely informed about the procedures and risks involved in the research and must give their consent to participate. Ethical standards also require that researchers do not put participants in circumstances where they might be at jeopardy or harm as a result of their participation. Harm can be both physical and psychological.

There are two standards that are applied in order to help protect the privacy of research participants. Almost all research guarantees the participant's confidentiality by assuring them that identifying information will not be made available to anyone who is not directly involved in the study. The stricter paradigm is the principle of anonymity which means that the participant will remain anonymous throughout the study, even to the researchers themselves. Clearly, the anonymity standard is a stronger assurance of privacy (Oppenheim, 1992; Sunders et al., 2003). In order to comply with these ethical considerations the following measures were undertaken to ensure that ethical values are not jeopardised during the research.

1- When interviewing e-Government experts to gain feed back on the constructed e-Government model, they were mad aware that the data might be used in research. Their permission was obtained to use interviews as part of the research gathered data.
2- Participants in the survey were introduced to the importance of the research through a covering letter. They knew that their participation would be analyzed to contribute to the findings but with a guarantee that their personal information would remain anonymous and not declared in any circumstances.
3- When interviewing IT mangers in the Jordanian public sector to gain feedback on the findings of this research, they were made aware that the data may be used in the research. Their permission was obtained to use interviews as part of the research gathered data and with a guarantee that their personal information will stay private not to be declared in any circumstances.

3.13 Summary

In the past few years there has been a growing debate in academia on the supremacy of quantitative and qualitative methods over each other (Jick, 1979; Kirk & Mille, 1986; Stoker, 2003; Munck, 2004; Tarrow, 2004). It has also been noticed that plenty of e-Government published literature lacks a clear methodology which may be because of e-Government is a new area in academia with no clear methodological guidance (Heeks & Bailur, 2007). To overcome this concern it is important to choose the most suitable methods that will gather data which will answer the research question. In this research when investigating the gap between supply and demand of e-Government in Jordan, multi-method approach which is a combination of quantitative and qualitative methods is the most suitable methodology for effectively answering the research question. Furthermore multi-method is highly recommended by researchers who have reviewed existing e-Government research (Heeks & Bailur, 2006; 2007; Gil-Garcia & Pardo, 2006).

Chapter 4

The Development of e-Government Implementation Model

4.1 Introduction

The discussion in the previous chapter highlighted the characteristics of e-Government as being a recent, multidisciplinary and complex topic, a topic that includes various stakeholders with no existing standard definition of e-Government. There are different types of e-Government and e-Government itself is a topic with a dynamic and evolving nature (Yildiz, 2007). All of these factors have led to the absence of a standard comprehensive model or framework of e-Government. Although, there have been some attempts by researchers and governments to create a generic e-Government model, models seem to be very different from one another and are viewed from different perspectives. Heeks & Bailur (2006) explain that one of the reasons of current e-Government research being weak is because it makes "little use of frameworks of knowledge from governance and little use from within e-Government in order to encourage an accumulation of knowledge" they therefore highlight the importance of "greater engagement with frameworks and models that emerge within the e-Government literature". The purpose of this chapter is to create and develop a generic model for the implementation and management of e-Government projects on a national level. Figure 4.1 represents the chapter flow:

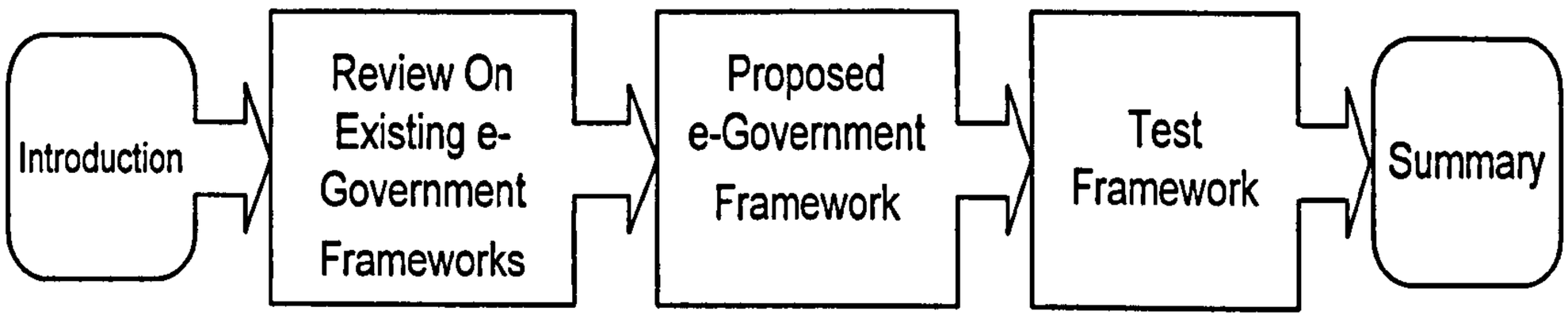

Figure 4.1: Chapter flow

4.2 The Need for a Generic e-Government Model

Heeks & Bailur (2007) emphasise the importance of creating a generic model by concentrating on "using a quickly grasped model rather than a complex theory", in order to understand the e-Government topic and achieve better research output. In the case of this research the creation of such a model will produce the following benefits:

- The model will bring together the most important aspects of e-Government.
- It will help the researcher in understanding issues attached to the implementation of an e-Government project.
- It will summarise different research conducted on e-Government and it will bring together previous e-Government models.
- The new framework will be the starting point of the research and will benefit other researchers in the future and enable them to build a comprehensive understanding of e-Government.

4.3 The Model Development Plan

Both qualitative and quantitative secondary data have been used to identify model elements, data sources included e-Government literature including previous research, academic journals and books, conference papers along with government publications related to the topic. More than 300 related documents have been tagged and identified into 7 major categories; these were (e-Government theory, e-Government models, central government, agency transformation (organisational issues), technical issues, social issues, and technology channel). Following that the main parameters in each category have been listen and identified, this has led to the creation of different main parts of the contracted e-Government model, finally understanding how do the main parts of the model interact with each other and listing them in one graph has led to the creation of a pilot e-Government model. Pilot model has been introduced to four e-Government experts in the UK and using semi-structured interviews feedback on the model has been obtained. The final step has been the finalisation of the model based on experts' feedback.

4.4 Review of previous e-Government Models

When reviewing existing literature on e-Government, models have been found in various sources. These include books, individual researchers, and academic specialised journals, models developed by various governments and models by international institutions. e-Government models found in different published materials were divided into three major categories.

- e-Government stage models
- e-Government architecture framework
- Comprehensive e-Government frameworks

4.4.1 E-Government Stage Models

The oldest method for constructing e-Government models has been the e-Government stage models (Layne & Lee, 2001; Hiller & Belanger, 2001; UN/ASPA, 2001; Baum & Di Maio, 2000; Deloitte & Touche, 2001; Moon, 2002 Siau & Long, 2005). The philosophical argument behind the stage models is that e-Government transforms into different evolving phases over time. Each phase is considered to be a stage. At each stage the service delivery of a government website becomes more advanced and appealing. This, however, requires higher standards of technological integration within government bodies. Nevertheless, the consumer of these services must be capable and adapted to use these services. Of course each stage has its unique characteristics and its own requirements, enablers and challenges. Reviewed stage models varied from 2 to 6 stages. Here is a list of different stage models found in the literature:

- 2 majors stages (Reddick, 2004).
- 4 stages models (Baum & Di Maio, 2000; Layne & Lee, 2001).
- 5 stage models (UN/ASPA 2001; Hiller & Belanger, 2001; Moon, 2002).
- 6 stage models (Deloitte & Tauche, 2001).

Reviewed stage models seem to be similar since they were constructed based on the same philosophical argument which divides the e-Government development into different distinct stages. Figure 4.2 shows the Layne & Lee (2001) four stage model.

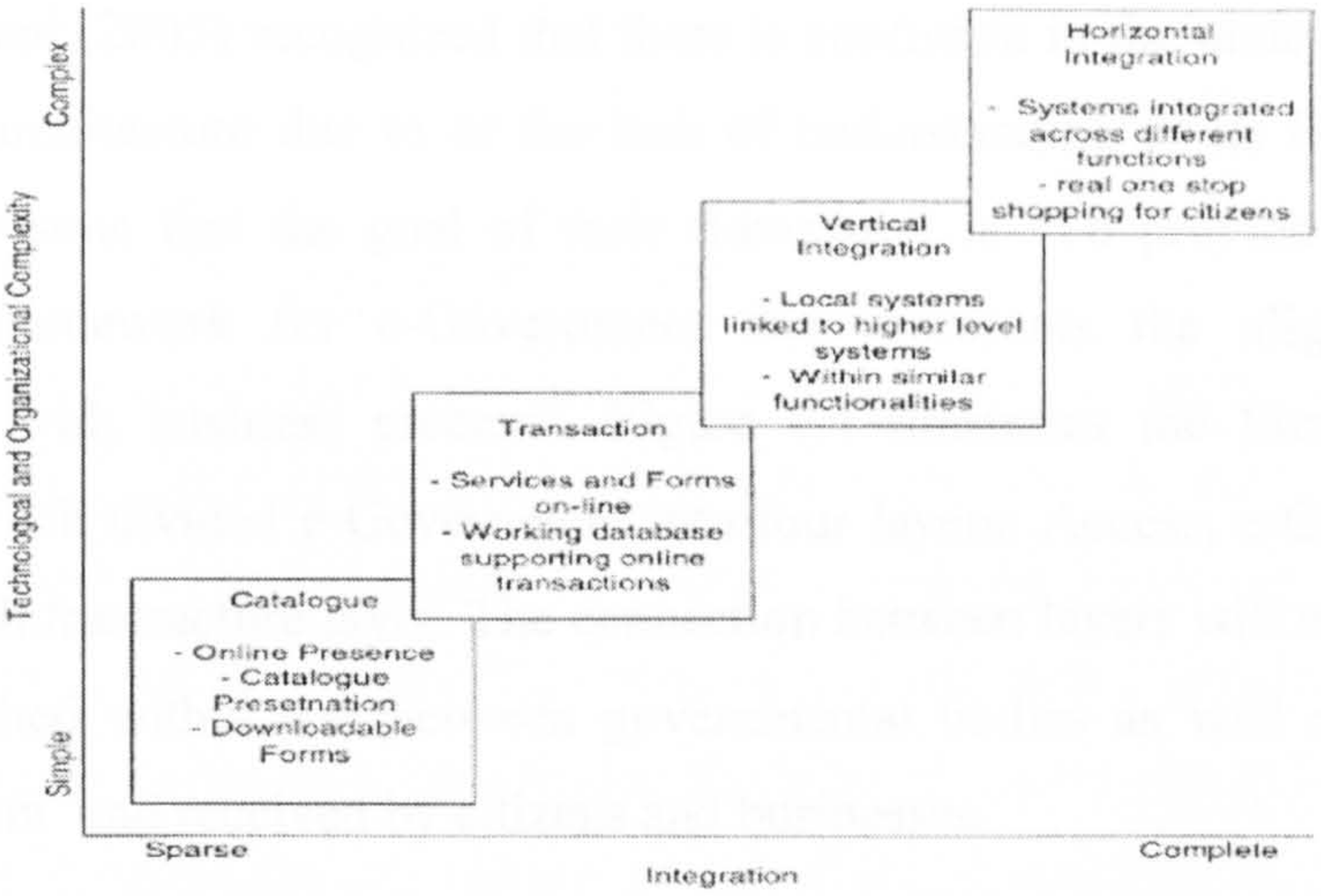

Figure 4.2: e-Government stage model. Layne & Lee (2001)

A recent study conducted by Siau & Long (2005) compared most of the existing e-Government stage models indicating the strengths and weaknesses of these models. Siau & Long propose a comprehensive five stage synthesis e-Government stage model that covers and integrates all ideas found in most of the preceding stage models shown in figure 4.3.

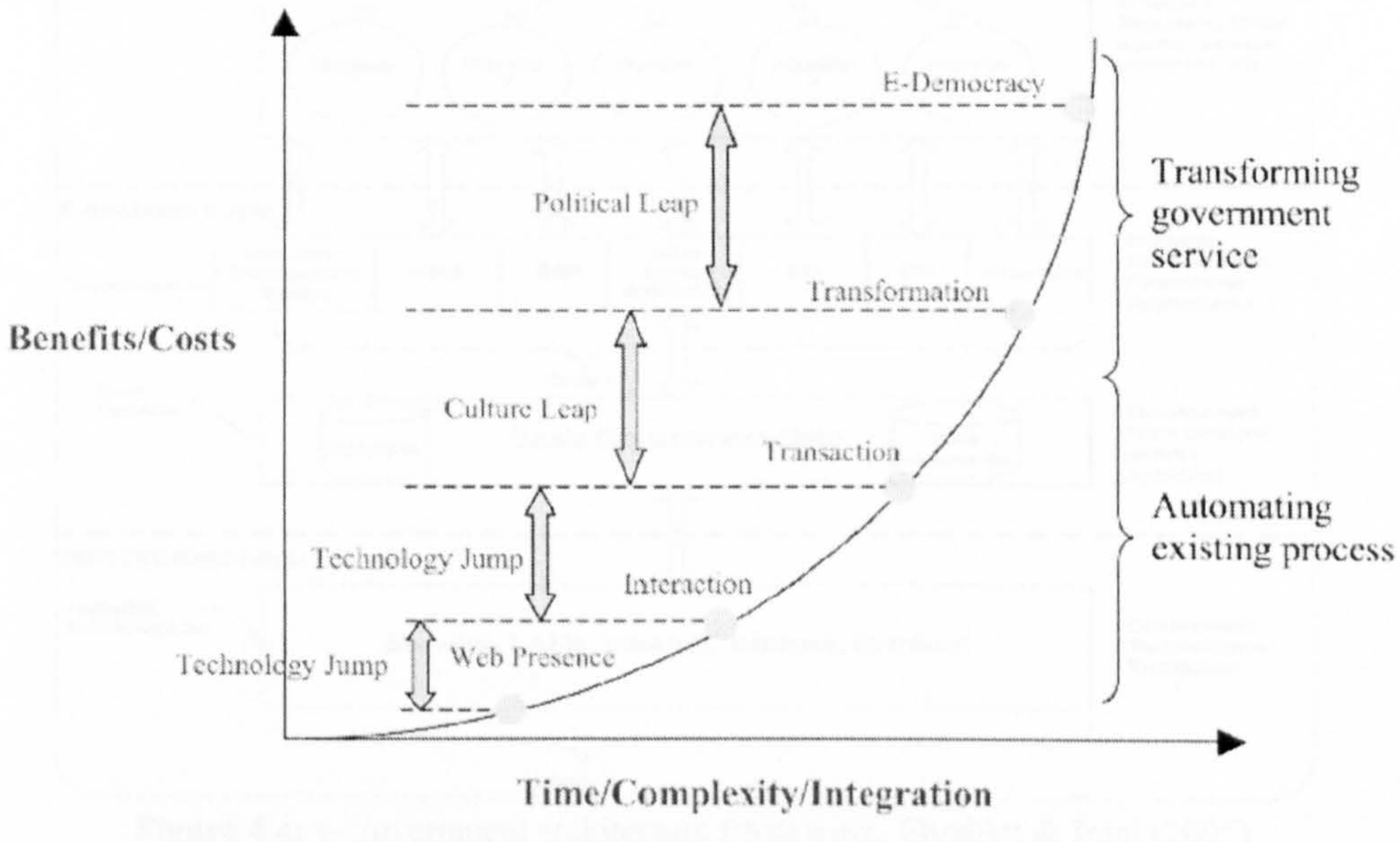

Figure 4.3: Siau & Long Five-stage model. Siau & Long (2005)

Nevertheless, other researchers such as Hodgkinson (2002) and Government Publications have introduced similar stage models.

4.4.2 e-Government Architecture Models

Ebrahim & Irani (2005) recognized that there is confusion in the understanding of e-Government architecture due to of the lack of understanding of its implementation process. They state that the goal of their framework is "To provide an integrated architecture framework for e-Government that represents the alignment of IT infrastructure with business process". Figure 4.4 illustrates the Ebrahim & Irani framework which divided e-Government into four layers: Access, e-Government, e-Business and Infrastructure layer. The connection between layers will enable services to be established within and between governmental bodies as well as ensure that services are sent and received by citizens and businesses.

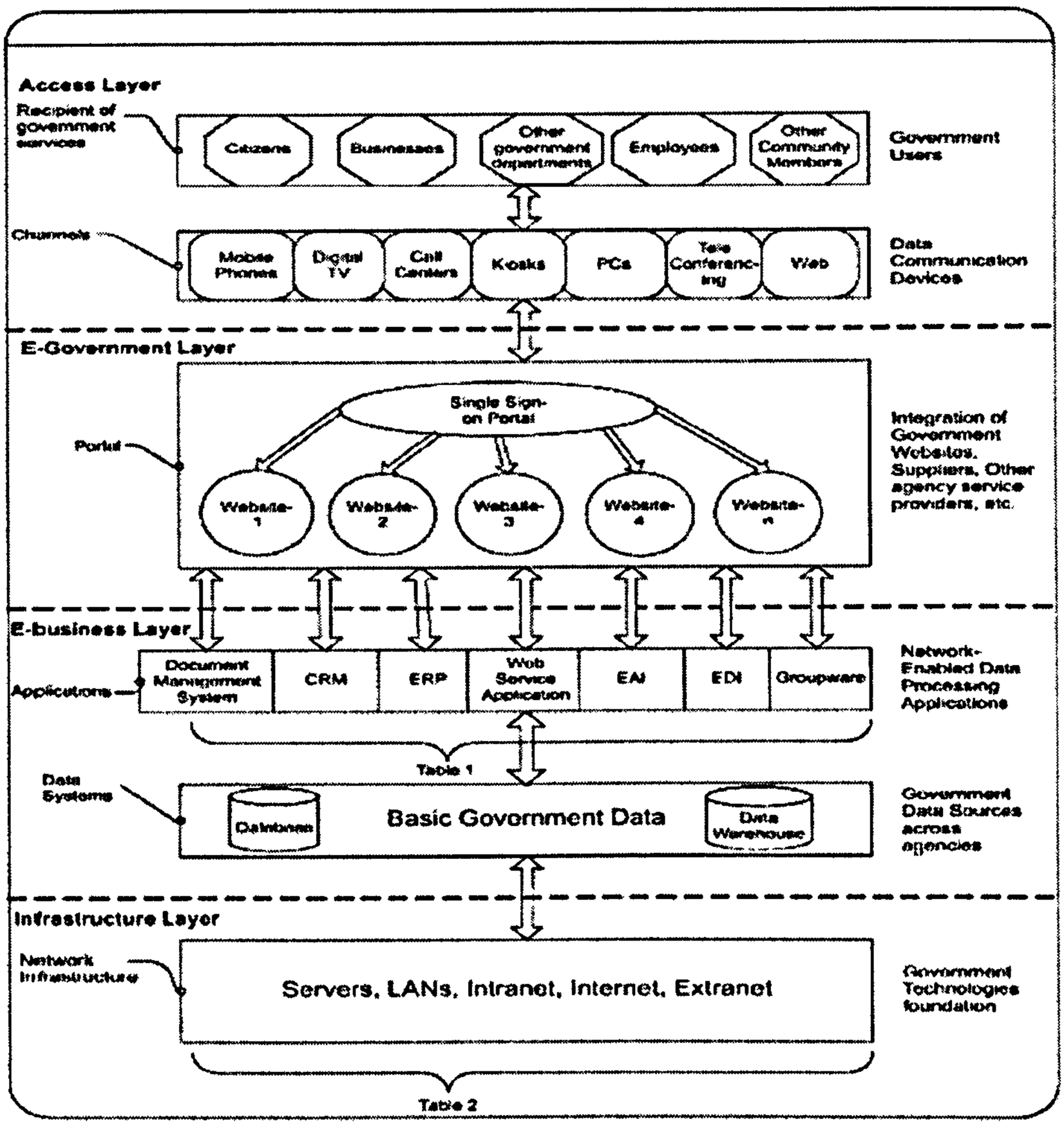

Figure 4.4: e-Government architecture framework. Ebrahim & Irani (2005)

Beynon-Davies (2005) more recently Heeks (2006) presented an architecture model similar to the one presented by Ebrahim & Irani (2005). Heeks (2006) dividing the e-

Government architecture into 4 different enablers. These were Recipient, Channel, Processing and Sources.

4.4.3 Adoption and Comprehensive Models

Al-Ruzaiqi (2003) conducted research to develop an e-Government adoption model for the Sultanate of Oman civil agencies shown in figure 4.5. The model was based on a mixture of quantitative and qualitative research methods, conducted on existing e-Government projects in Oman. The adoption model gives great importance to technology and its management and requirements within governmental agencies to be transformed to e-Government without dividing the transformation into different stages. The Al-Ruzaiqi model seems to be an e-Readiness and requirements assessment for the implementation of e-Government within a certain government agency.

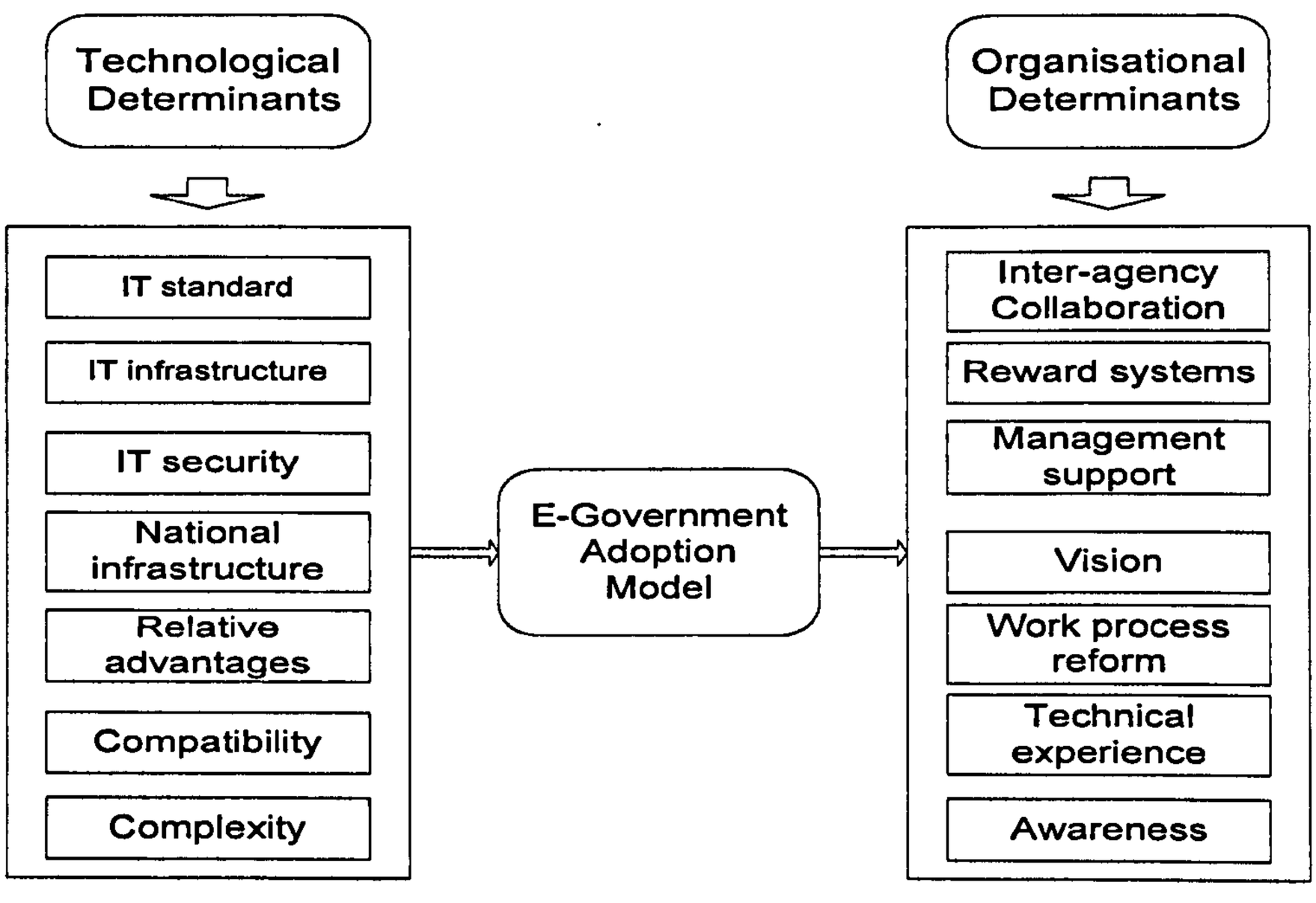

Figure 4.5: e-Government adoption model. Al-Ruzaiqi (2003) p89.

Alternatively a comprehensive e-Government model introduced by Schedler et al., (2004), their model illustrates e-Government from a strategic and managerial perspective, which brings a wider understanding of e-Government. Barnard & Rodenstock (2003) presented a comprehensive e-Government model which combined the e-Government development in stages along with the social managerial aspects

related to e-Government, yet the technological factor seems to be missing. Grant & Chau (2005) developed a generic model shown in figure 4.6 based on different operational definitions of e-Government. They presented a generic model that would be adaptable for different countries with different characteristics. Their model presents e-Government from a fully functional perspective assuming e-Government is at its highest functionality levels. The model presents the goals and duties of an operating e-Government, without going into details of the evolving nature of e-Government. Jansen (2005) supports the previous argument by criticising the Grant & Chau model by stating "the framework seems primarily to be useful for descriptions and classifications and not for explaining and exploring why and where."

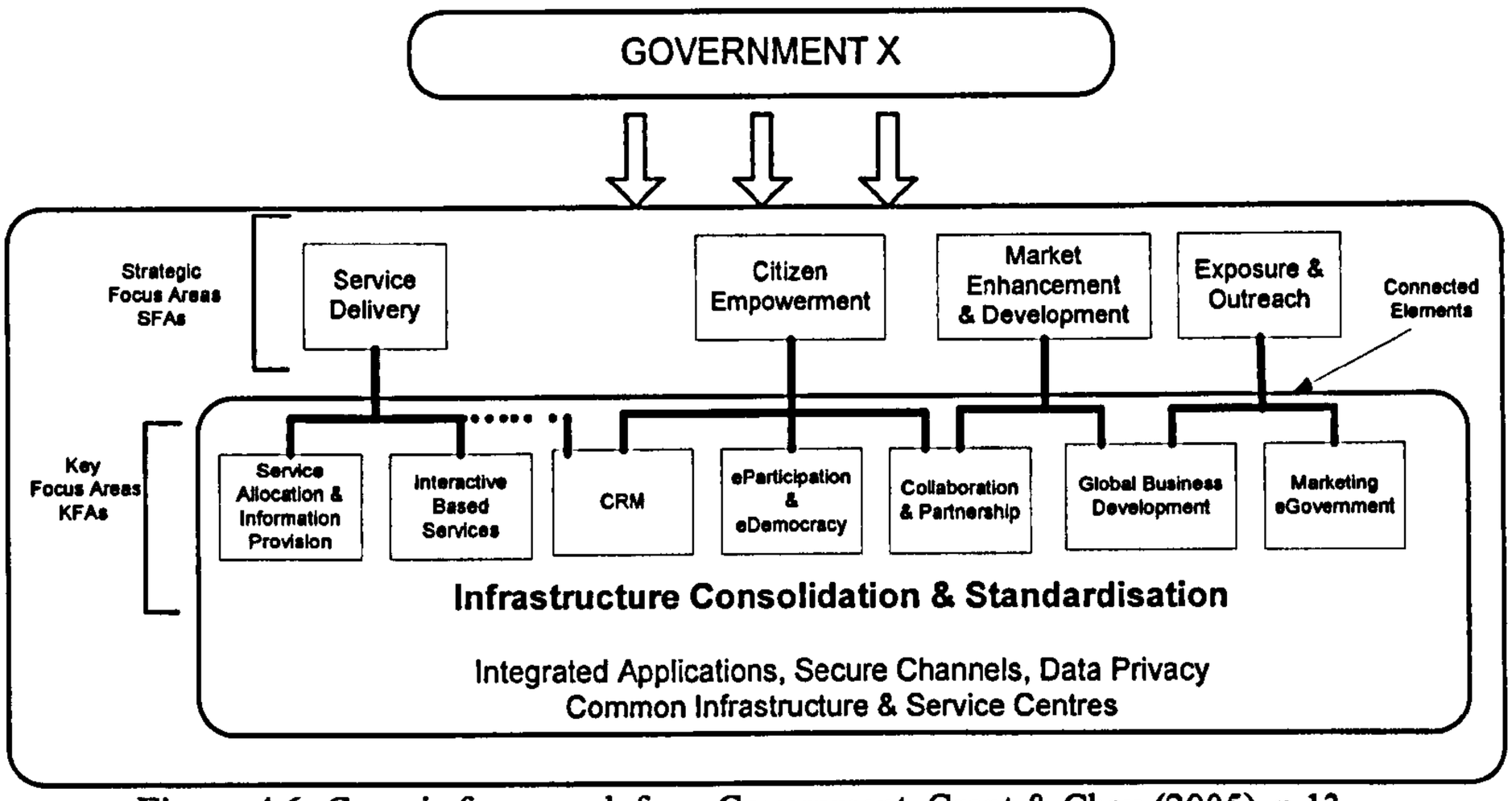

Figure 4.6: Generic framework for e-Government. Grant & Chau (2005), p 13.

4.4.4 Discussion of Existing e-Government Models

The review of e-Government models has proved to be important in bringing different e-Government literature together. Heeks & Bailur (2006) highlight the importance of this procedure since existing e-Government models seem to be individual attempts without building on existing e-Government models. Heeks & Bailur state "e-Government research is far from even this—not only is it neither theory building nor theory applying, it has not even reached the level of accumulating knowledge about its own models. The image is of random rocks being thrown into a pool rather than building cairns of knowledge".

Generally all reviewed models lack the indication of inputs and outputs of e-Government, potential barriers, when and where specific requirements are important (Heeks & Bailur, 2006). Also models do not clearly differentiate between various disciplines of e-Government. Therefore frequently organisational, social and technical aspects are mixed or overlap with each other. Another important finding has been that models do not seem to distinguish between central government responsible for the implementation of e-Government and individual government bodies (Government agencies) that are adopting e-Government. Models tend to present e-Government as a project concerning one body and this has led to confusion in understanding different issues within it.

4.5 Proposed e-Government Model

The second step after the extensive review of the e-Government literature has been to create a generic e-Government implementation model. Figure 4.7 shows the main bodies of the created e-Government model. While Figure 4.8 shows the model in details. The main bodies of the model are:

1. Inputs of e-Government: presents the drivers behind e-Government. Drivers have been identified in Chapter 2.
2. Central government: presents the national e-Government project, which is usually managed by the central government.
3. Agency e-Transformation[9]: presents the implementation of e-Government within a government agency.
4. e-Government consumers: presents e-Government users and technological mediums that will enable them to interact with government.
5. Barriers: present obstacles that will negatively affect e-Government's transformation on a national level.
6. Outputs of e-Government: present the goals and outputs of a successful fully functional e-Government.

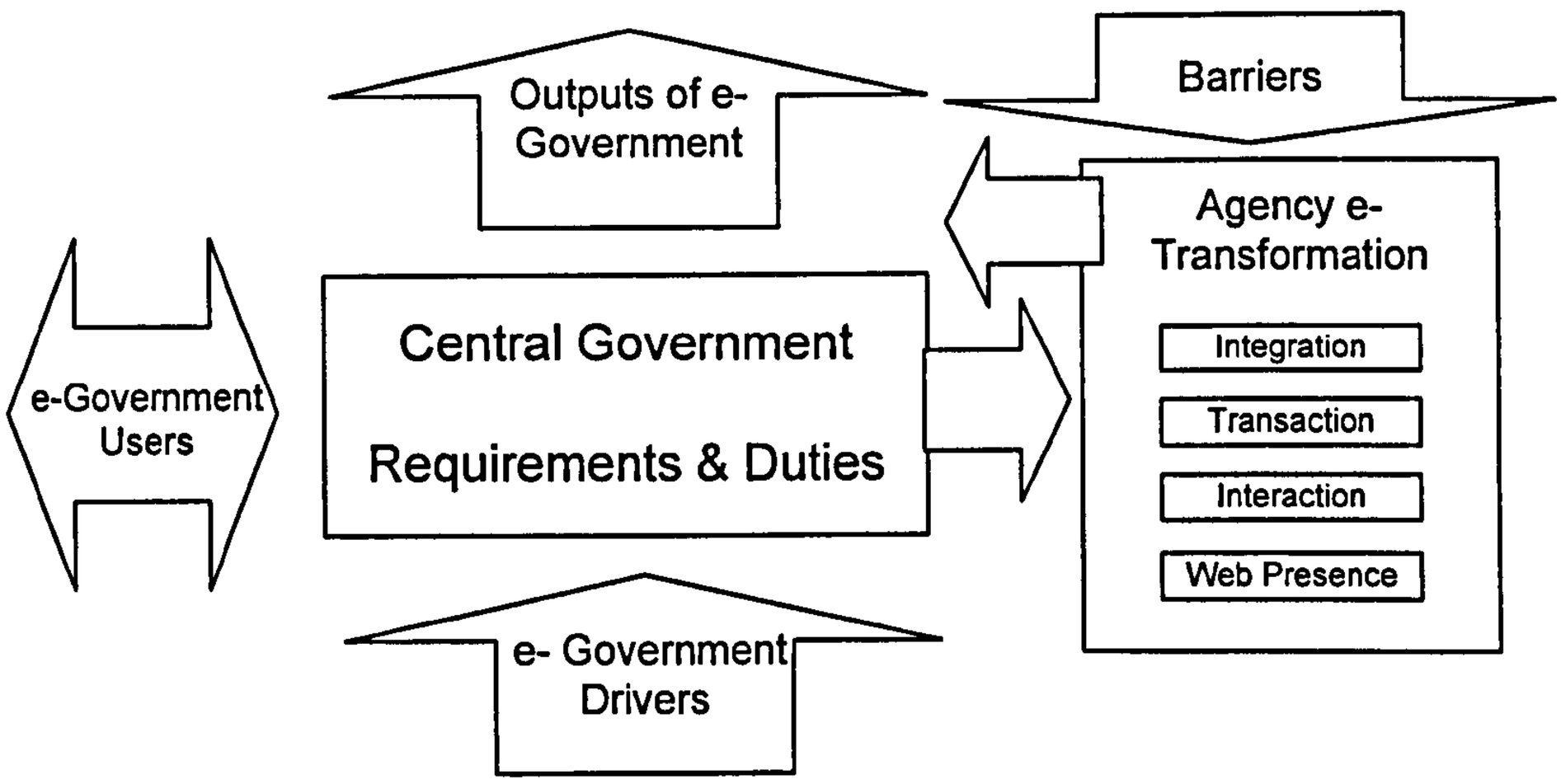

Figure 4.7: Main bodies of the generic e-Government model

[9] Electronic transformation (e-Transformation): Is the practice that an organisations performs to establish presence on the World Wide Web.

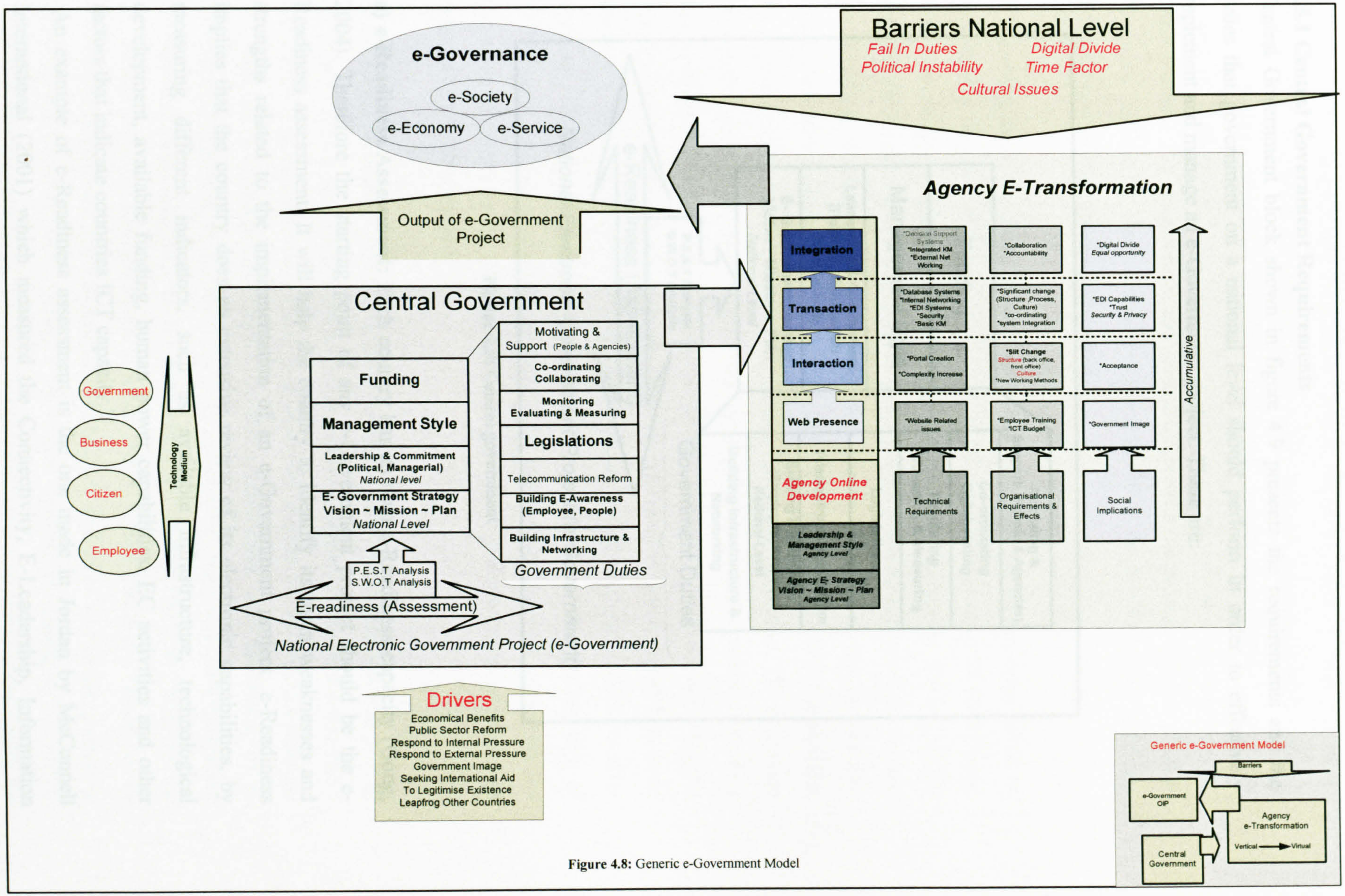

Figure 4.8: Generic e-Government Model

4.5.1 Central Government Requirements

Central Government block shown in figure 4.9 presents the requirements and the duties that government on a national level should perform in order to effectively implement and manage an e-Government project. These are:

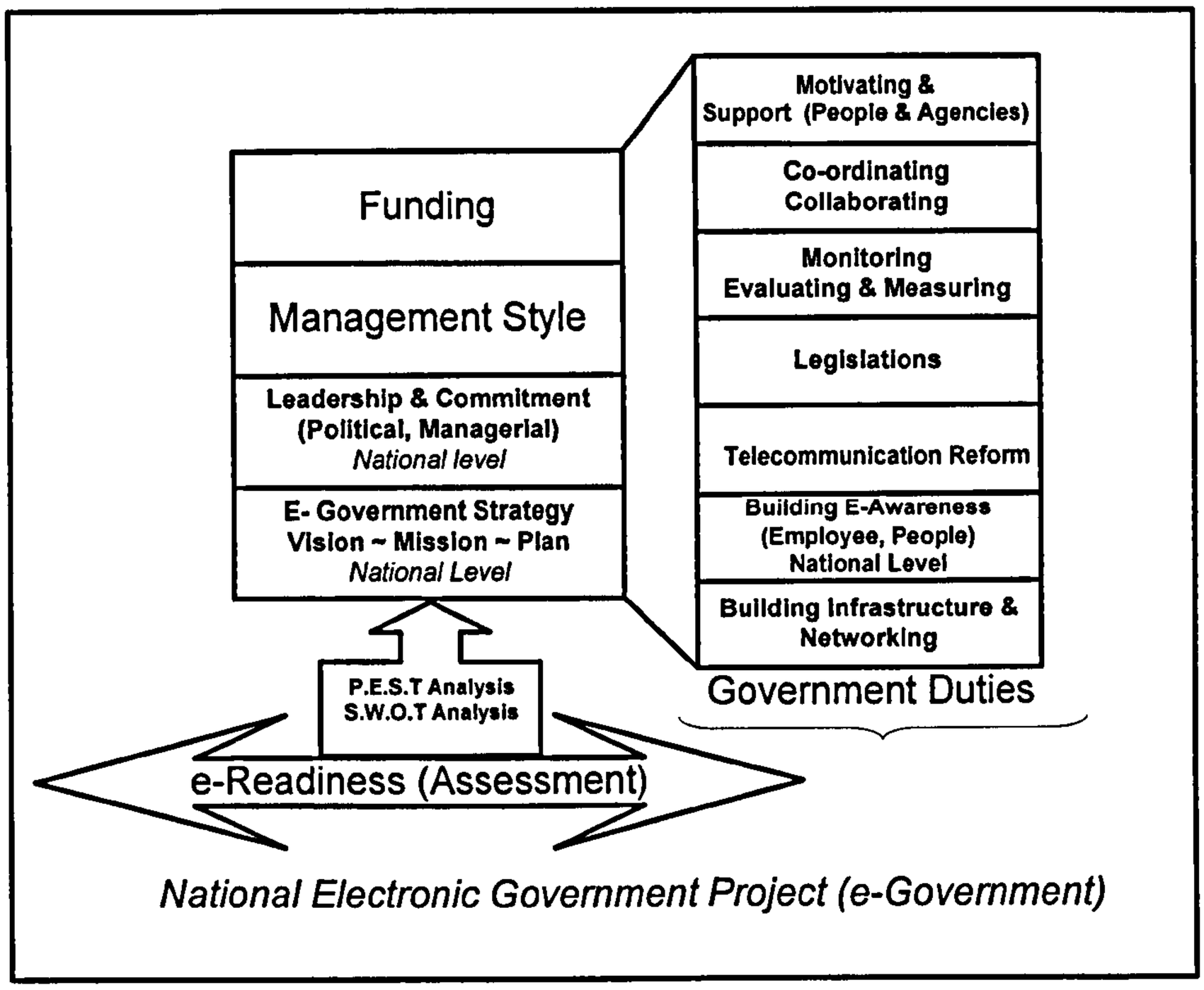

Figure 4.9: Central government

a) e-Readiness Assessment: Each country has its own e-Readiness capacity (Gong, 2004). Therefore the starting point of any e-Government project should be the e-Readiness assessment. It will help the country to identify its main weaknesses and strengths related to the implementation of an e-Government project. e-Readiness implies that the country does an extensive review of its electronic capabilities, by measuring different indicators, such as available infrastructure, technological development, available funding, human power capabilities, EC activities and other factors that indicate countries ICT capacity.`

An example of e-Readiness assessment is the one made in Jordan by McConnell International (2001) which measured the Connectivity, E-Leadership, Information

Security, Human Capital and e-Business Climate. However, each of these indicators includes many variables for example connectivity includes percentage of household electrical power connection, telephone connection, mobile connectivity ....etc. The Economist Intelligence Unit (2005) developed a global e-Readiness ranking that implied nearly 100 quantitative and qualitative criteria, organised into six distinct categories measuring the various components of a country's social, political, economic and technological development.

b) Running Analysis: Since e-Government is a macro-project on a national level, e-Readiness assessment will help countries to run the appropriate analysis for forming the e-Government implementation strategy. Analytical tools include SWOT, PEST and PESTEL Analysis. SWOT Analysis is a strategic planning tool used to evaluate the Strengths, Weaknesses, Opportunities and Threats (SWOT) in any project that requires decision making (Piercy & Giles, 1989). The first step in SWOT analysis is the clear definition and statement of the desired end state or objective. The definition of objective must be explicit and approved by all participants in the process. This first step must be performed carefully because failure to identify correctly the end state aimed at, leads to wasted resources and possibly failure of the project. PEST analysis stands for "Political, Economic, Social and Technological analysis". More recently there is PESTEL which is the same as PEST analysis but with the addition of Environment and Legal analysis, both tools are useful techniques for measuring the countries requirements in order to form the appropriate e-Government strategy and action plan (Aichholzer, 2004).

c) Strategy Formation: Strategy implies having a clear vision, mission and goal in addition to setting up an action plans for the implementation of e-Government. PEST and SWOT analysis will enormously help countries to form the appropriate strategy. The lack of a strategy can impact on the effectiveness and usefulness of e-Government (Choudrie et al., 2005). Li (2005) after reviewing China's e-Government development emphasised that the solution to improve e-Government in China was the implementation of macro strategies. Pradhan (2002) argues that each country has its own unique economic, political and cultural criteria. Therefore ICT strategy must be implemented to serve each country's needs and capabilities. Zhang et al., (2005) emphasise the importance of knowing stakeholders' needs in order to implement the

most adequate e-Government strategy. Chen et al., (2005; 2006) highlighted that most if not all e-Government strategies and implementation plans in developing countries have been based on theories and experiences of developed countries however imported strategies are proving to be problematic within developing countries (Huang et al., 2004). Therefore Chen proposes a research framework identifying critical success factors that influence e-Government strategies as shown in Figure 4.10. However, the importance of identified factors varies depending on the country's profile.

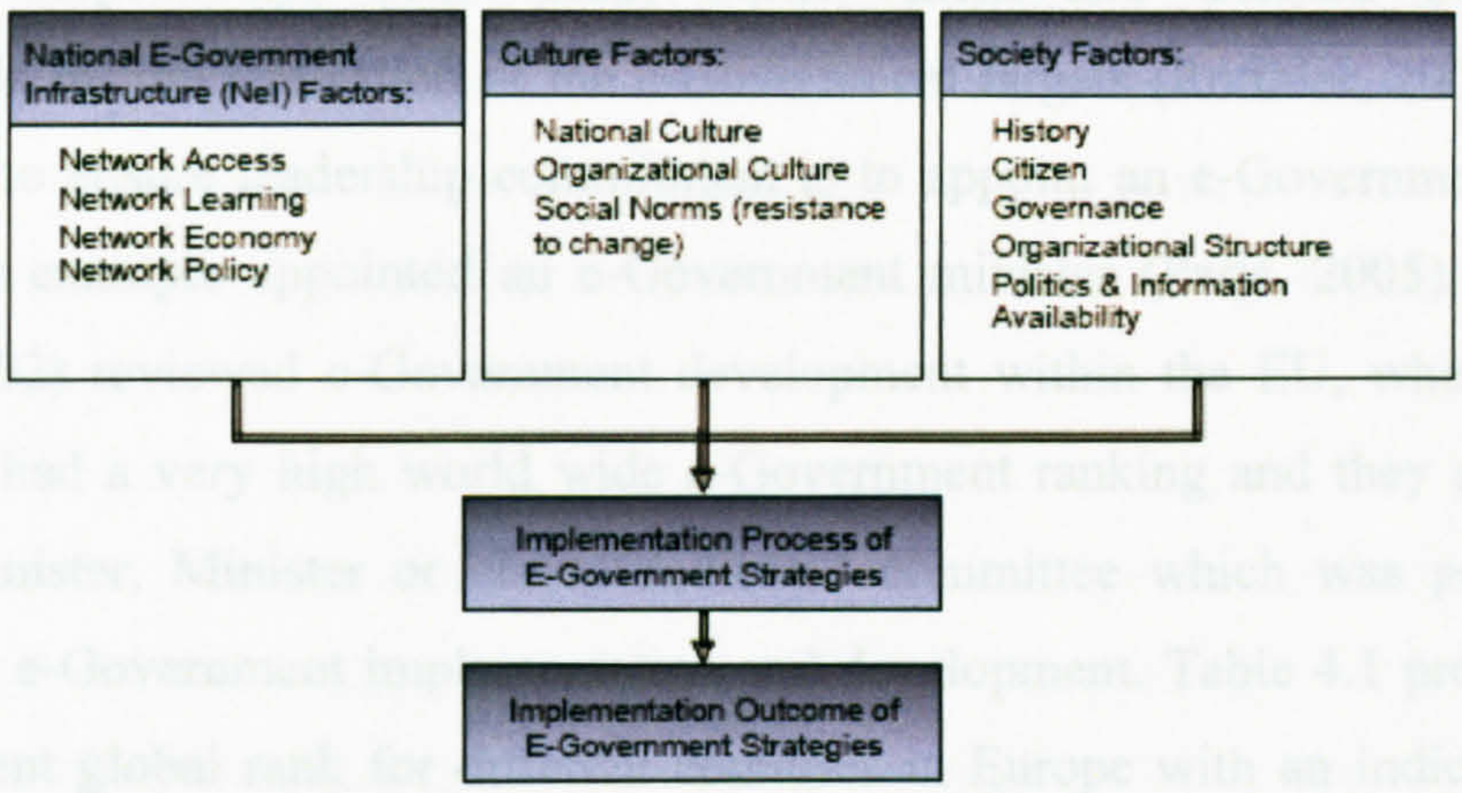

Figure 4.10: Critical success factors for forming e-Government strategies. Chen et al, (2006)

It is not only deploying the appropriate strategy that is important. Aichholzer (2004) emphasises that e-Government strategy must be reviewed and changed by the progress of an e-Government project. That is because priorities become different at each stage of its development.

d) Leadership: Leadership is an essential requirement of effectively implementing e-Government. The OECD when reviewing e-Government's development in Finland, Denmark and Norway highlights the importance of leadership as one of the most central factors for its success (OECD, 2003; 2003b; 2003c; 2003d; 2003e; 2005). Both political and administrative leadership is required to effectively transform governments (Ho & Ni, 2004). Charih & Robert (2004) when reviewing one of the worlds most successful e-Governments which is Canada's GOL (Government on Line) concluded that "GOL extends beyond the mere efficient and effective delivery of services of the federal government of Canada. It marks the beginning of an

organizational and political transformation. It is a long-term project that will require sustained political and administrative leadership".

Leadership will maintain e-Government implementation strategies. It will embrace change and reform embedded by e-Government within public sector organisations. However, to ensure political commitment to e-Government projects, targets must be set and announced from the highest political positions in the country to ensure leadership engagement and commitment. For example in the UK, Ireland and Germany respectively, Tony Blair, Bertie Ahern and Gerhard Schröder are responsible for the realisation of the e-Government targets (Rotthier, 2004). Another approach to ensure leadership commitment is to appoint an e-Government minister, Wales for example appointed an e-Government minister (Paris, 2005). Strejcek & Theil (2002) reviewed e-Government development within the EU, where reviewed countries had a very high world wide e-Government ranking and they also had the Prime Minister, Minister or else a dedicated committee which was positioned to follow up e-Government implementation and development. Table 4.1 presents the e-Government global rank for different countries in Europe with an indication to the governmental body responsible fore implementing e-Government.

Table 4.1: e-Government rank and authority. Strejcek & Theil (2002)

EU country	e-Gov Rank (2001)	Authority
Sweden	1	Prime Minister
Austria	7	Chancellor, Minister
Denmark	3	Minister
Finland	2	Minister
France	10	Prime Minister
Germany	6	Minister
Greece	14	Ministers
Netherlands	5	Minister(s)

e) Choosing the Appropriate Management Style

Bottom Up vs. Top-Down: It is very important for a country to decide the managerial approach it will choose to deal with e-Government implementation. Approaches include

- **Top-down:** A government imposes e-Initiatives on people and governmental bodies.

- **Bottom -up:** taking into account stakeholder's considerations and responding to their needs when implementing e-Government (Tung & Rieck, 2005).

Developed countries in general are more likely to implement a bottom up approach since government agencies, business and citizens require e-Government services. However, developing countries tend to apply an up down approach, radically imposing e-Government on government agencies and expecting people to easily adopt and use e-Government. The preferable approach in the developing countries such as Jordan is to use a mixed approach which is a combination of Top-down and Bottom-up management. By doing so in early stages of e-Government the country could adopt the Top-down approach to build ICT capacity in the country, in later stages the country could start implementing a Bottom-up approach taking stakeholders' needs into consideration.

Centralise vs. Decentralise: Another important managerial consideration is the central government approach to spreading e-Government initiatives across governmental agencies throughout the country. Approaches could be:

- **Centralised:** in this case there is a body within central government (i.e. Ministry of Finance) with strong authority responsible for implementing and mentoring e-Government. It also sets up strategies and projects so that government agencies across the country must comply with them.
- **Decentralises:** there is no clear body responsible for implementing and mentoring e-Government, also governmental agencies set their own strategies to comply with the national e-Government or ICT strategy.

In Greece for example e-Government is the responsibility of the Ministry of Finance (Stamoulis et al., 2001). Other countries involve the Ministry of Planning and Design or the ministry of communication. The idea behind choosing powerful ministries is to help in effectively managing the e-Government project. The Ministry of Finance can manage and support spending on e-Government Projects, the Ministry of Planning and Design can ensure setting up plans and monitoring their implementation across government agencies.

Countries could include more than one government body responsible for implementing e-Government projects. In Finland both the Ministry of Finance (MoF), in addition to the Ministry of Interior (MoI) are responsible for implementing the e-Government project, Figure 4.11presents e-Government Responsibilities in Finland

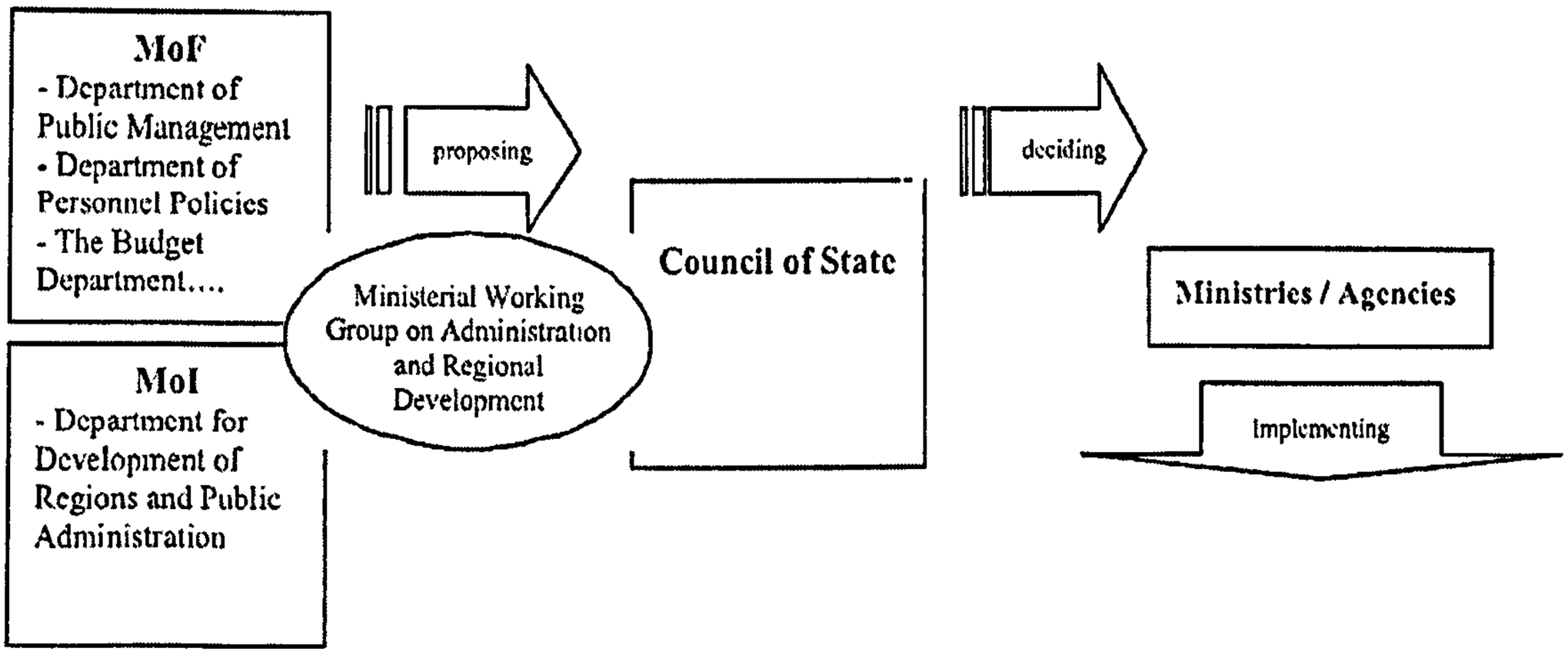

Figure 4.11: e-Government responsibilities in Finland. OECD (2003e) P27

f) Funding e-Government: Central government should allocate a specific amount of its financial budget for IT expenditure in addition to an exact amount to fund the e-Government projects. Furthermore central government in some cases has the role of financially assisting government agencies implementing e-Government projects when the lack of financial resources is an obstacle. Developed countries in general do not face significant financial difficulties when compared to developing countries that generally have an inefficient economy. Developing countries require extra funds to be invested in the telecommunication infrastructure (Basu, 2004). This adds to the costs of the implementation of e-Government projects in developing countries.

In order to enhance the ICT connection in a country and provide better Internet connection to the people, central governments could establish partnerships with the private sector to build infrastructure that will benefit government and businesses (Allen et al., 2005). Governments could benefit from existing private sector infrastructure developed to deliver service to customers. Countries that have successfully used this approach include the USA and the UK which used

infrastructure and networks developed by banks to enable e-Banking services to deliver services to people (Reeder & Pandy, 2005). (OECD, 2003) proposed different methods to overcome the lack of funding problems which are:

1- Public private partnership.
2- Seeking international aid.
3- The help and involvement of NGO's (Non Governmental Organisations).
4- Governments must allocate an exact percentage for expenditure on e-Government.

4.5.2 Central Government Duties

After a government has made its e-Readiness assessment, formed the required strategy and chosen the most appropriate method to manage e-Government, the government has essential duties to perform in order to effectively implement e-Government. These are:

a) Building Infrastructure: Infrastructure generally means to bring electronic communication closer to the citizens, for instance, to promote home computers with Internet access or to provide public connections to electronic services (Strejcek & Theil, 2002; Bhatnagar, 2004; Wong & Tam, 2005). Some countries define it as the supply of a communication network, privatisation in the field of telecommunication and the like. Building infrastructure for e-Government is the first step in its practical adoption. It is time consuming, costly and requires high technical standards. It implies investment in huge networks providing highways to connect different government bodies together and also to enable Internet access to citizens and businesses, while also investing in technologies within governmental agencies.

The capability of infrastructures between developed and developing countries differs dramatically. Most of the population in developed countries are connected online and people who are not connected can easily get connected. On the other hand developing countries generally have a low e-Readiness index, lack IT expertise and lack connectivity (Chen et al, 2006). Developing countries need to manage bigger and more complex infrastructure projects. In addition the lack of knowledge management, lack of agreement on standards and protocols between communicating systems and the absence of flexible technology engineering will result in Enterprise Application

Integration (EAI) being inefficient in future stages of e-Government. Furthermore it will create a deformed e-Government output which will be unable to integrate across government bodies, therefore failing to deliver services (Ebrahim & Irani, 2005).

b) Telecommunication Reform: The lack of advanced ICT infrastructure is a difficulty facing newly developed and developing economies (Basu, 2004). Governments have to encourage direct and indirect investments by attracting capital from private and foreign ICT investors in order to participate in providing the required e-Government infrastructure. Liberalizing the telecom market and encouraging competition has proven to be a successful approach to achieving the attraction needed to speed up infrastructure construction and improve universal Internet access in many countries including China, Malaysia and Singapore (Xue, 2005). Another leading example is Estonia. It started liberalizing the telecommunication market in the mid 90's. At that time Estonia had an inadequate telecommunication infrastructure. By the year 2001 Internet connection costs were reduced by 80% and now Estonia has one of the most advanced telecommunication infrastructures in Europe (Schware & Deane, 2003). According to the Economist Intelligence Unit (2005) Hong Kong and Singapore are the most liberalised e-markets in the world. Not surprisingly according to the same report both countries have scored the highest connectivity and e-Business level around the world.

c) Legislating for e-Government: Legislating e-Government laws that will enable e-Government adoption, funding, function and integration is a wide area of research which requires enormous effort from governments to accomplish (Gil-Garcia & Pardo, 2005). The success of e-Government initiatives and processes are highly dependent on government's role in ensuring a proper legal framework for their operations. Commercial activities are becoming more and more based on electronic transition of digital data. Any government willing to be active online must move from a paper to an electronic environment, issues such as contract formation, electronic signature, record keeping, evidence, intellectual property rights, privacy, illegal and harmful content, taxation are considered to be aspects of online activities and must be addressed. "Cyber laws" provide the legal basis for electronic information exchange, payment and transaction. Schware & Deane (2003) identifies three major legal enablers for e-Government online activities. These are:

- Electronic signatures.
- Electronic documents plus electronic record keeping.
- Criminal cyber laws.

However legislating e-Government laws in the developing countries is an extremely complex procedure. The lack of EC activities and regulatory expertise has led to ignorance in the process of cyber interactions. Nevertheless, it is easy for developing countries to employ guidelines imported from successful e-Government adopters for regulating cyber laws. The problem is that these cyber laws involve specific system requirements together with certain levels of technical security. In this case the technical requirements are part of setting up these laws (Basu, 2004). An additional challenging issue is that constitutional changes are required to enable e-Government laws in order to separate power, share information and integration between different government bodies (Jaeger, 2002), which in many countries is a complicated and time consuming procedure.

d) Measuring and Evaluating: Governments must monitor the progress of e-Government across the country and evaluate its performance. Due to e-Government being a new topic, little agreement exists on a uniform set of measures (Dawes et al., 2004b). Many measures focus on the visible front of e-Government, such methods have been designed to measure the service delivery from a consumer perspective and are usually referred to as website content analysis. Website content analysis was adopted according to much of the published academic literature by many e-Government researchers (Heeks & Bailur, 2006), also by international organisations specialised in studying the development of e-Government globally including IBM, the Economist intelligence Unit, Accenture, the UN. Recently studies evaluating e-Government started to include financial and social benefits as part of the assessment of e-Governments success. The OECD (2005) reports that a UK study of 14 e-Government projects included user benefits as criteria for measuring their success. Gupta & Jana (2003) developed an e-Government measurement framework that consistent of different measurements. These measures included:

- Hard measures: Cost benefit analysis, Benchmarks in e-Government.
- Soft measures: Scoring method; Stages of e-Government, Sociological angle.

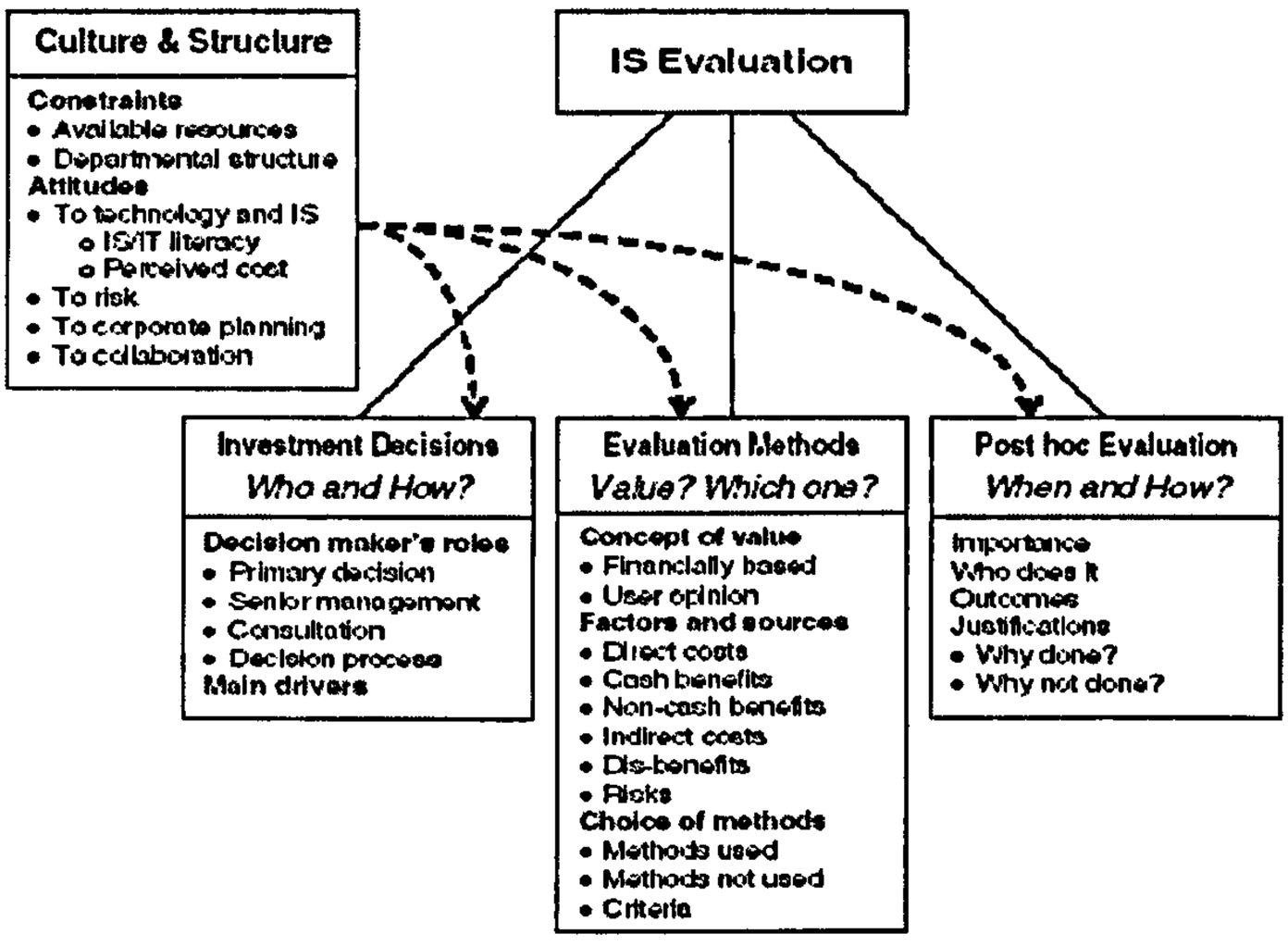

Figure 4.12: e-Governments evaluation framework. Irani et al., (2005)

More recently Irani et al., (2005) developed a framework, Shown in figure 4.12, to evaluate local e-Governments based on two case studies within the UK in addition to a comprehensive revision of available literature regarding e-Government evaluation. Irani's model represents an introduction to comprehensive evaluation models for e-Government projects.

e) Building e-Awareness: Educating citizens about the value of e-Government is an important factor for its success, unless citizens know what is available from the e-Government they will not be likely to seek to use e-Government (Jaeger & Thompson, 2004). Becker et al., (2004) highlight e-Government awareness as one of the main success factors of e-Government projects. Awareness building must include public sector (politicians, public servants) in addition to business and citizens. Sealy (2003) calls for a special unit within government that seeks to build awareness and commitment among leaders and civil society, including the private sector, to ensure an integrated approach.

Methods of public sector and business awareness building include holding seminars and work shops promoting e-Government, central government could make it mandatory for governmental agencies to adopt compulsory IT courses for their employees, for example Italy and other European countries impose compulsory courses on public sector employees such as ECDL (European Computer Driving

License) to raise awareness of e-Government and its applications (Biasiotti & Nannucci, 2004). Al-Ruzaiqi (2003) in his research concludes that the media as well has an essential role in building required e-Government awareness.

f) Coordination and Collaboration: Successful e-Government transformation requires integration between government agencies to deliver services from a single point (e-Government Portal). Integration will develop a compound organizational, architectural and technological scenario which requires effective coordination and collaboration strategies between and within e-Government agencies. Collaboration includes both horizontal agreement across agencies at the same level of government and vertical among different levels of governmental agencies. Successful collaborations go beyond the traditional legal frameworks that tie public agencies together through the operation of single programmes. They represent voluntary relationships often driven by the need to solve mutual problems or share the same service delivery (Wood-Harper et al., 2004b).

Integration between government agencies in advanced stages of the e-Government project will rise up different administrative concerns, responsibility and accountability for delivering services, the funding of IT projects and turnover of such projects (Wong & Welch, 2004). This will create a hostile environment between different responsible managers involved in the integration process. Central government must take the lead and play the role of the coordinator between different agencies to ensure that required collaboration is achieved. This could be done by setting up e-Government teams or units that will be in charge of setting up responsibilities for combined e-Government projects. Also a unit will monitor the progress of e-Government initiatives and programmes across the country. In the UK for example the office of the e-Envoy[10], established in 1999, has been central in co-ordinating e-Government efforts across different government agencies (Lam, 2005). Coordination from early stages of the e-Government project will help to set up duties and responsibilities across agencies also it ensures technical standardization of systems to avoid duplication or incompatibility in later stages of integration.

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[10] The Office of the e-Envoy is part of the UK Prime Minister's Delivery and Reform team based in the Cabinet Office. The primary focus of the Office of the e-Envoy is to improve the delivery of public services and achieve long term cost savings by joining-up online government services around the needs of customers.

g) Motivation and Support: Central government has the duty to motivate and support e-Government projects and e-Initiatives across the country. Motivation and support goes beyond central government duties such as funding and setting the appropriate legal frameworks. One method is by central governments introducing reward systems to promote innovation between the public sector's top management. This will motivate them to take the risk of investing in new e-Government projects. Another important method of motivation is by setting examples of fast successful e-Government projects to prove that e-Government works.

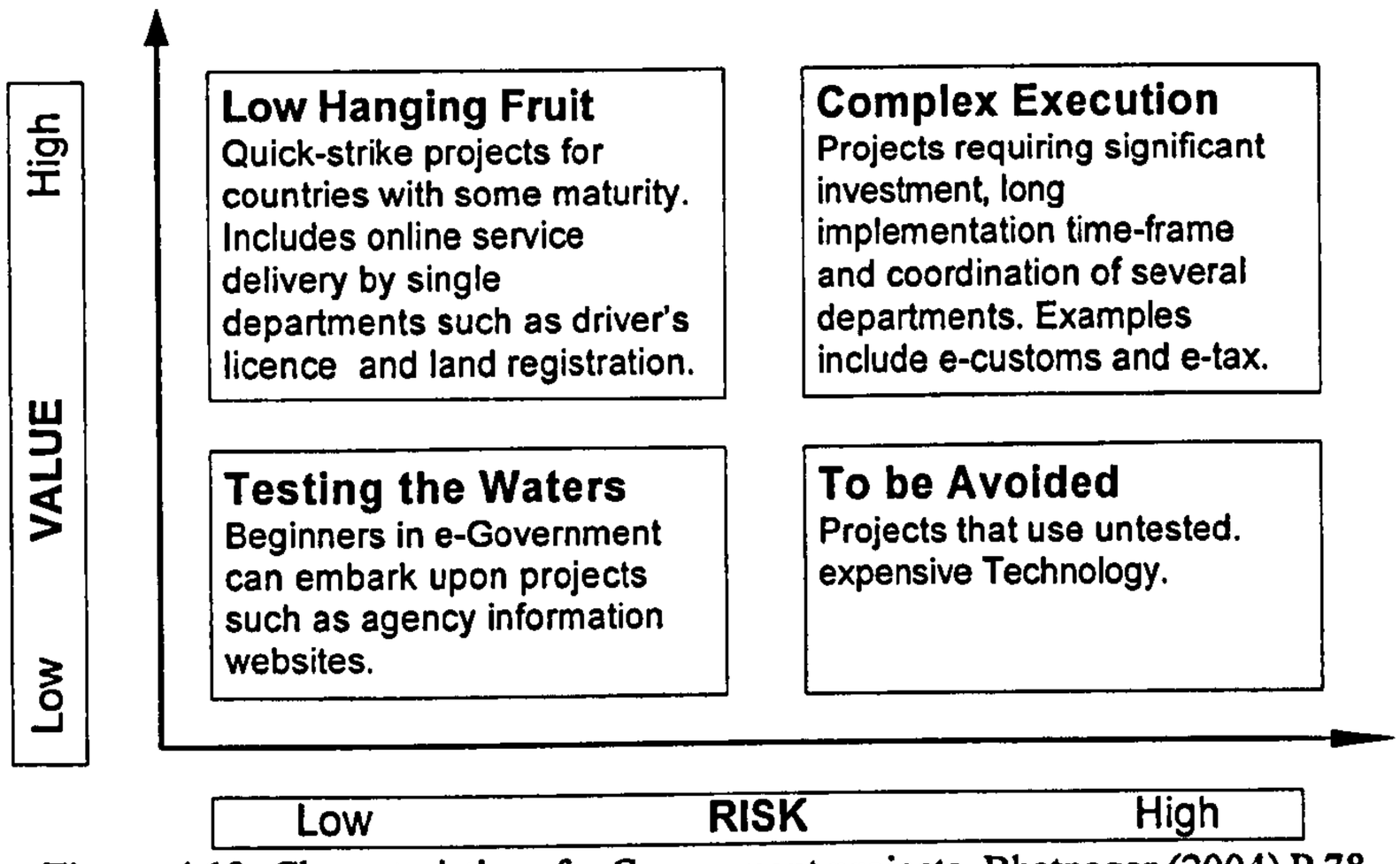

Figure 4.13: Characteristics of e-Government projects. Bhatnagar (2004) P 78.

According to Heeks (2003b; 2003c) in developing/transitional countries, 35% of e-Government projects are total failures, 50% are partial failures and only 15% are successes. Therefore the importance of setting up fast successful e-Government projects is paramount in developing countries. Such projects will encourage agencies across the country to start their e-Initiatives, citizens will join up with governments in supporting and believing in e-Government. The Netherlands Government has what is called "The Super Pilots Projects" which are fast implementation e-Government projects that will serve a significant sector of the society with high returns and magnificent success (Hoogwout, 2005). Bhatnagar (2004) calls for such an approach in what is called Quick Strike Projects that will benefit government and people. These projects will create more demand from the society on e-Government. Projects will also create a learning experience for government agencies of how to successfully

implement e-Government. The characteristics of Quick Strike Projects (Projects with High Value and Low Risk) are presented in Figure 4.13.

4.5.3 Agency e-Transformation

The second part of the model focuses on different stages that government agency transforms to when implementing e-Government in what is called e-Transformation. The ideas behind this part were based on stage models originally developed by Layne & Lee, (2001). The e-Transformation of an agency is presented in four different stages (Web presence, Interaction, Transaction, Integration) where at each one of these stages governmental agencies will have specific technical requirements, organisational implications, social implications. Figure 4.14 presents Agency e-Transformation.

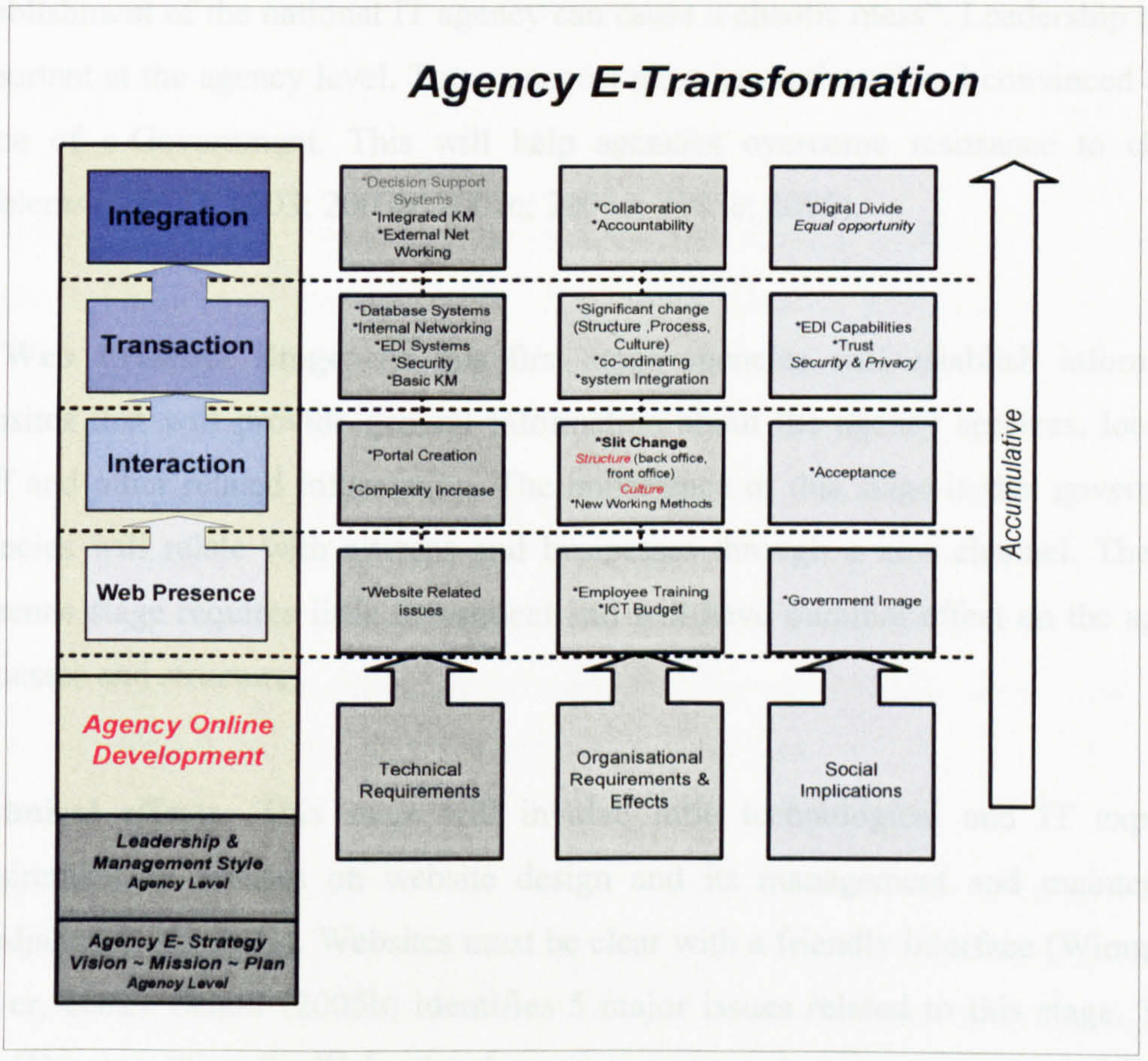

Figure 4.14: Agency e-Transformation

a) Agency Strategy and Leadership: Each government agency before starting its e-Transformation process must adopt an IT strategy, this strategy could be either imposed by central government through an IT or e-Government national strategy, or agencies may develop their own strategy to comply with central government's strategy. However when different agencies have different strategies coordinating becomes more important across different government bodies, this will insure that the vision and mission of different agencies lead to the same goal (Varavithya & Esichaikul, 2003; Schedler et. al., 2004). Jaeger & Thompson (2004) demonstrate that e-Government initiatives can be further complicated by conflicting goals for e-Government between different levels of government. A review of Thailand's e-Government development by Varavithya & Esichaikul (2003) concluded that "Individual e-Government development without the national IT master plan and the establishment of the national IT agency can cause a chaotic mess". Leadership is also important at the agency level. Top managers must be motivated and convinced of the value of e-Government. This will help agencies overcome resistance to change problems (OECD, 2003; 2003b; 2003c; 2003d; 2003e; 2005).

b) Web Presence Stage: At this first stage agencies will establish informative websites that will provide general information about the agency services, location, staff and other related information. The importance of this stage is that government agencies will relate with citizens and businesses through a new channel. The web presence stage requires little investment and will have minimal effect on the agency processes and structure.

Technical effects: This stage will involve little technological and IT expertise requirement. It focuses on website design and its management and maintenance (Medjahed et al., 2003). Websites must be clear with a friendly interface (Wimmer & Holler, 2002). Scholl (2005b) identifies 5 major issues related to this stage. These are: (1) competition for Web-related resources among departments and agencies, (2) maintaining the currency of information on the website, (3) flagging (and consequently managing) the temporal nature of some information, (4) privacy issues

regarding the log file analysis of Web traffic and (5) managing the responses to incoming e-mails if this is enabled.

Organisational effects: From the organisational perspective the web presence will not have an impact on the agency processes and structures. However, the agency at this stage must start the empowerment of its staff preparing them for future advanced stages of the project. Training must include all employees, including higher management, middle and shop floor. This can be achieved by deploying IT training courses such as ECDL (Biasiotti & Nannucci, 2004).

Social effects: Government website quality will have an effect on people's views of government, Wimmer & Holler (2002) who conclude that if the government website is updated, with accurate information and attractive, simple interface this will positively reflect on the government's image leading to the support and usage of the e-Government website and vice versa (Carter & Belanger, 2004).

b) Interaction Stage: Interaction implies that government agencies' websites will enable one way at a time interaction with users. Examples of interaction include the use of e-mail for feedback or inquiry purposes, the establishment of chat rooms, online inquiries and document downloads from website (forms, applications, publications). It is essential at this stage that central government starts creating the government portal (Wimmer, 2002). Portals are government websites that represent the online entrance for any users seeking to utilize e-Government. Through it users will find required agency websites. Examples of portals include www.firstgov.gov USA, www.direct.gov.uk UK, www.canada.gc.ca Canada.

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Technical effects: The interaction and portal creation stage does not differ much from the website presences stage technologically, the issues attached to the website creation will extend to the government portal such as website design, management and maintenance (Sebek, 2003; Criado & Ramilo, 2003).

Organisational effects: The interaction stage will have slight changes from the government structure since it will introduce a new channel to interact with the

customers. Nevertheless, the agencies will continue to receive applications and services through their offices, a number of employees will be allocated to answer the e-mail enquiries or to answer the online enquiries, this bring change to the process. From the cultural side employees have to be encouraged to use ICT and adapt to e-mail usage (Layne & Lee, 2001).

Social effects Social implications at this stage are similar to the previous stage. The first 2 stages of government e-Transformation will create a public image of the e-Government and will set up the evolutionary path for later stages, which will affect the people's willingness to use available online material (Layne & Lee, 2001; Adeshara et al., 2004).

d) Transaction Stage: The transaction stage or what is known as the "vertical integration stage" will enable customers to transact online (2 way interaction at a time) with government agencies. Examples of transaction services include tax payment and car license renewal. The transaction stage is the first indication of practical transformation of government. The interoperability and integration of formerly dispersed applications and databases will gradually lead to redefining and redesigning the underlying business processes in a vertical dimension within a single government agency. This requires a certain organisational, technical and legal changes. The transaction with the citizen will imply that the citizen provides the agency with personal information and sometimes makes payments online.

Technical effects: Transaction requires a large amount of technical effort. Firstly data bases must be created and networked within the government agencies. This procedure involves data sharing which requires effective knowledge management. With the establishment of electronic data interchange (EDI) systems, online payment systems will raise security concerns (Joia, 2003). Agency ICT expertise capacity is a concern especially with agencies that are not familiar with complex systems and their integration. Outsourcing to access expertise from the private sector, maintaining support from central government, or the involvement of ICT horizontal teams will provide solutions for the lack of expertise (Medjahed et al., 2003; Wimmer & Holler, 2002; Gamper & Augsten, 2003; Criado & Ramilo, 2003).

Organisational effects: This challenging stage of agency e-Transformation will implement actual change that will demonstrate government's willingness to go forward with the transformation process and reform. Transaction will have a big impact on the organisation structure, process and culture (Kim & Lee, 2004). A new interacting channel will change the structure of the organisation. The front office in the transformed agencies will be re-organised to a single online service delivery point (Millard et al., 2004). The change in the front office will significantly affect the back office of a government agency. Different departments within an agency will come together which involves process re-engineering (Reid & Bardzki, 2004). Cultural complications including employee's resistance to new working methods, top and middle management feeling the danger of their authority being jeopardised, which might hinder and slow down transformation. Solutions include strong leadership (Joia, 2003), planned change, motivation and involvement polices.

Social effects: For the citizens and the businesses, transaction will not be available if they only have the capability to connect online. They also require the ability to pay online for service. Credit cards, smart cards and other technologies are EDI enablement methods. In most developing countries the majority of the population does not have a credit card. Trust in the Internet, privacy concerns about submitted data and government trust and culture are also important social considerations at this stage (Jaeger & Thompson, 2004; Evans & Yen, 2006).

e) Integration Stage: The integration stage will enable e-Government users to access services online from a single point even if these services were provided previously by different public agencies. At this stage the restructure and reprocess will not only affect different departments within a government agency but will also include different government agencies at different levels.

Technical effects: This stage calls for enormous technical requirements. Systems across agencies will integrate with each other to ensure that process can flow between different responsible agencies (Sebek, 2003) The challenges of integration are posed by the heterogeneity of the existing IT landscape making it difficult to accomplish any interoperability between those existing systems and databases. Therefore

technology compatibility and effective knowledge management between different systems is an important issue to ensure successful integrations is possible (Reid & Bardzki, 2004; Ebrahim & Irani, 2005). Data sharing will increase security concerns between government agencies. Tambouris & Wimmer (2005) identifies 3 important pointers to ensure sufficient technical integration across government bodies at the integration stage. These are:

- Appropriate process muddling integrating the external and internal point of view of service performance as well as harmonization of the understanding of life events and public services at the portal layer (external view) are needed.
- An appropriate technical infrastructure with seamless interfaces between the portal and the local legacy systems and overall interoperability are required.
- A standardized data and service vocabulary to describe the content and services of public administration according to the life event approach are needed.

Organisational effects: This stage will have similar organisational implications to the transaction stage except on a much wider level (Kim & Lee, 2004). Different departments across different agencies will be brought together to deliver service from a single point. The integration of different agencies will elevate accountability concerns such as the funding, responsibility, supervision and maintenance of specific services (Joia, 2003; Janssen & Cresswell, 2005). Solutions include, in addition to strong leadership, planned change, motivation and involvement polices effective collaboration between different government agencies guarantied by central government success to ensure successful coordination between agencies from the early stages of e-Government deployment (Bovaird 2005; Allen et al., 2005; Culbertson, 2005; Settles, 2005; Scholl, 2004; 2005).

Social effects: At this stage the main social concern in addition to social concerns discussed in previous stages is the digital divide between citizens. Digital divide is the effect that e-Government will have on people who know and are capable to use and access it on the other hand people who do not have this capability and who will miss

out on many governmental services (Skok & Ryder, 2004). This will create divisional problems within the society, because governments at this stage will be serving part of the society which will raise equal rights opportunities concerns.

4.5.4 Technological Medium

e-Government functionality depends on interaction with people, business, employees, or other government bodies. Most e-Government literature has concentrated on the Internet as the only interaction channel for e-Government consumers. An example of that is the definition by UN/ASPA (2002): "e-Government is: utilizing the Internet and the World-Wide-Web for delivering government information and services to citizens". The claim that the Internet is the only interaction channel of e-Government is to some extent not accurate since e-Government could include any form of ICT including the normal telephone, or the mobile phone which is referred to as m-Government (Kushchu & Kuscu, 2003; Abramowicz et. al., 2006). Other publications called for the use of teletext TV as a channel to send information. Recently publications have called on the use of Digital TV to deliver government services (Smith & Webster, 2002; Gunter, 2004). Figure 4.15 presents the technological medium block within the constructed e-Government Model.

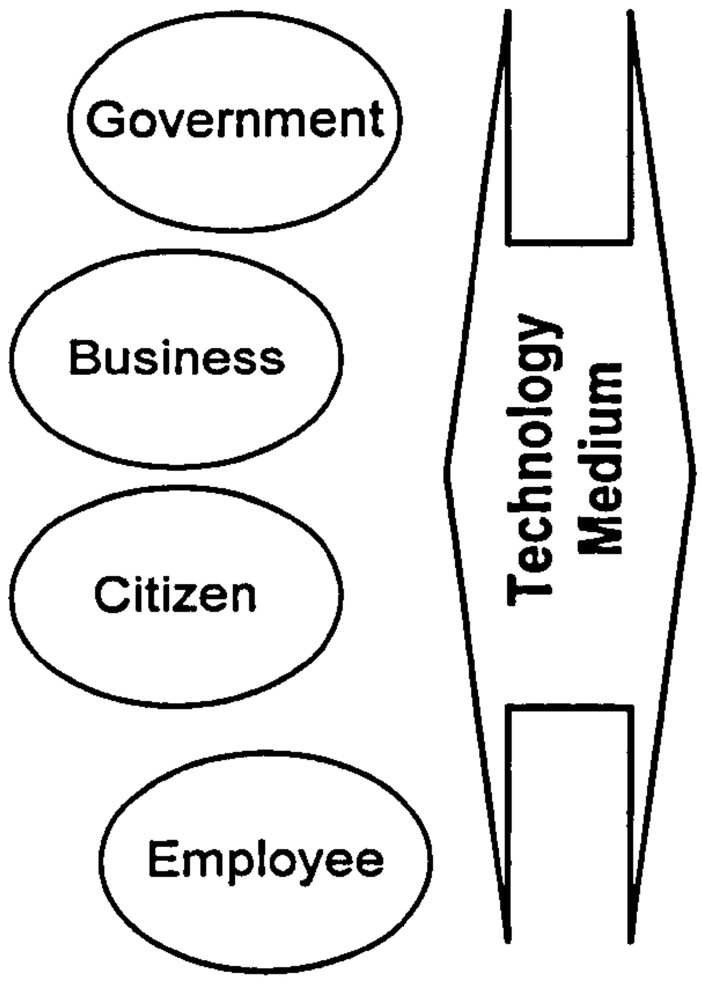

Figure 4.15: Technological medium

4.5.5 e-Government Outputs

This part of the model focuses on the outputs of an integrated e-Government. The ideas constructing this part were driven from 3 previously discussed aspects within e-Government. These are:

1. Benefits of e-Government: benefits of e-Government are only achieved if e-Government is functional.
2. Drivers of e-Government: the desire to achieve social, economical, administrative gains is achieved from e-Government output.
3. Definitions of e-Government: different definitions of e-Government give an understanding of what e-Government will produce.

It was then decided to divide e-Government national outputs into three main categories: e-Service delivery, e-Economy and e-Society which share some similarities with proposed e-Government outputs presented by (Schedler et al., 2004). The integration of these outputs is to produce e-Governance. Figure 4.16 presents the e-Government output block.

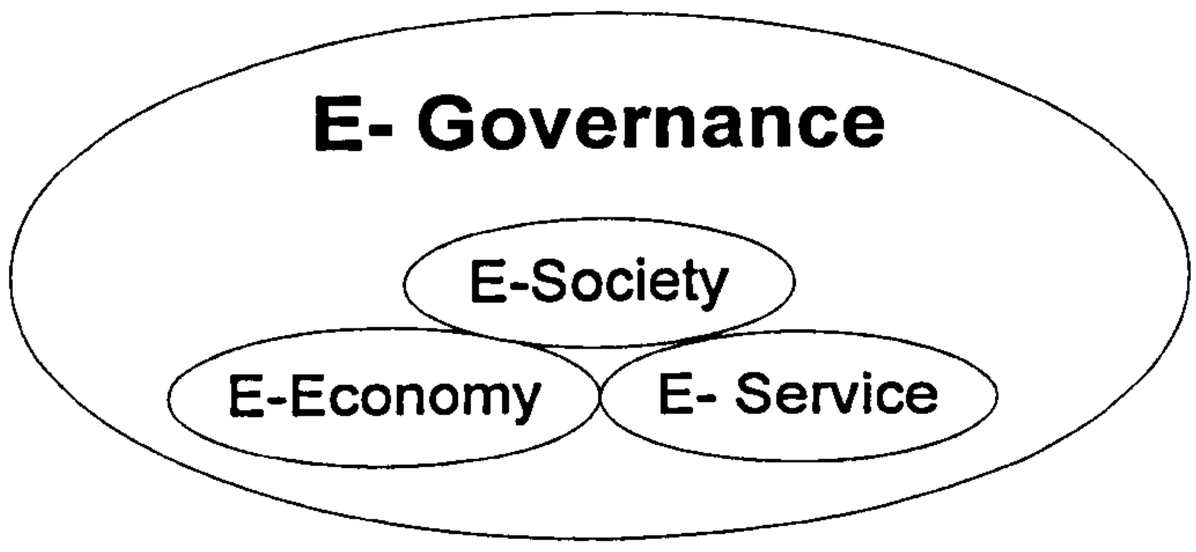

Figure 4.16: Outputs of e-Government

e-Service Delivery: Is government agencies delivering integrative or transactional services through ICT channels to e-Government users. However, to be able to deliver governmental services online this requires public sector reform via the integration of different agencies, which will have immense technological and organisational impact on government agencies achieving public sector reform and leading to government service becoming faster, cheaper, efficient and more transparent.

e-Economy: Includes all potential financial benefits affecting public sector agencies, business and people. Examples include benefits to government agencies when process is becoming cheaper, faster and fewer employees are required. Business will save time and cost by submitting tax and custom declarations online, also businesses could achieve e-Procurement opportunities with government agencies. e-Economy also refers to the positive benefits that e-Government will have on the country's economy. This includes:

- The development of EC infrastructure and regulations which will enable an e-Business atmosphere (Tung & Rieck, 2005). Also the e-Government project will increase the demand on software and hardware ICT products promoting the ICT market and industry within the country.
- e-Government will expand countries reach making it able to access new international e-Markets, also it will make courtiers able to integrate with the expanding electronic economy.
- e-Government has been proved to be effective in tackling public sector corruption (Cho & Choi, 2004). The decline of corruption will help significantly in developing the country's economy.
- e-Government projects will produce ICT expertise in both the private and public sector, which could be exported to other countries and so benefit the local economy.

e-Society: Refers to all e-Government outputs that will improve connection, knowledge and democracy between the population. The enhancement of the citizen's connection is achieved by people becoming connecting online involved in different social and commercial activities. ICT knowledge implies the increase of computer literacy and ICT expertise within the public and private sector. e-Democracy is achieved by citizens being updated with the latest developments through government websites, citizens taking part in the government decision making process, participating online in debating and giving feedbacks.

e-Governance: The ultimate output for any e-Government project is to achieve e-Governance. In order to distinguish the difference between e-Government and e-Governance, the concepts **"Government"** and **"Governance"** must be understood. Riley (2003) says "Government's foremost job is to focus society on achieving the

public interest". Kettl (2002) says "Governance is a way of describing the links between government and its broader environment – political, social and administrative....Governments are specialized institutions that contribute to governance".

Kettl (2002) in his analysis of American public administration differentiates between government and governance by defining Government as an institutional superstructure that society uses to translate politics into policies and legislation. Governance is the outcome of the interaction of government, the public service and citizens throughout the political process, policy development, programme design and service delivery. This means that the main difference between e-Government and e-Governance is that e-Government is a tool to achieve the governance (Allen et al., 2005). Therefore when the e-Government project produces e-Service delivery, e-Economy and e-Society their interaction together will produce e-Governance.

4.5.6 e-Government Barriers

This part of the model focuses on problems facing e-Government success on the national level. The literature reveals problems with e-Government on an organisational level within government agencies affecting their e-Transformation and problems on a national level affecting e-Government success across government agencies. Such problems tend to be connected with strategic and macro-level issues such as lack of infrastructure, funding and the absence of legislation. Since most of the problems found in an agency have been discussed in the agency e-Transformation part of the model, barriers included in this part are the ones affecting e-Government success across the country. Figure 4.17 presents e-Government barriers block.

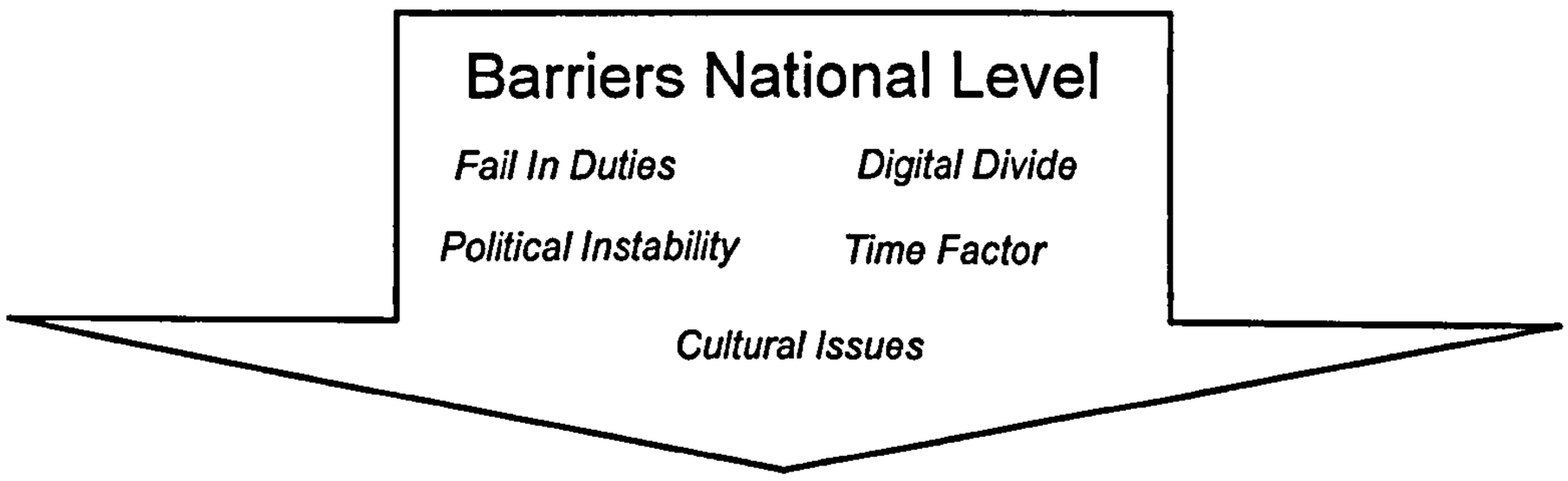

Figure 4.17: e-Government Barriers

1- Central Government failing in its Duties: Most of the barriers affecting e-Government at the national level are due to central government failing in its duties. The literature review has revealed that barriers in the developing nations have been due to central government lacking basic requirements and failing in resourceful duties such as funding, provision of infrastructure and legislation (Akman et al., 2005; Sharifi & Zarei, 2004; Basu, 2004). However, in the developed world problems have been found to be managerially related such as the necessity for coordination, evaluation, marketing and promoting the usage of e-Government (OECD, 2003; Seifrt & Petersen, 2002). The explanation for this is that e-Government in most of the developing countries is in the first stages. The lack of basics prevents them from going to the more advanced levels. At advanced stages of e-Government managerial issues become more important in order to achieve success, such as the management of change.

Time Factor: It's very important that e-Government has a time table for executing strategies and plans that will enable its development. Sharifi & Zarei (2004) argue that e-Government is implemented to respond to specific needs for the country, adding that if needs are not fulfilled in an acceptable time period the justification and validity of the e-Government project will become outdated. Technologically slow implementation and progress in an e-Government project will lead to technologies invested in being out of date in organisations. Therefore central government must give deadlines for different agencies to achieve the required progress. Akman et al. (2005) highlights those deadlines for agencies must not be overoptimistic in what he calls "Over-ambitious e-Government milestones". Deadlines must be within an acceptable time frame to be able to cope with the amount of change required especially in the integrative stages of e-Government, otherwise time scales and deadlines could be a barrier if unrealistic. Another issue related with the time is, if after a significant time e-Government does not produce any recognizable output and does not succeed, e-Government will be considered as a failure, consequently de-motivating decision makers, politicians and the public from supporting e-Government.

Digital Divide: Digital divide is defined as "The gap that exists between those with and those without access to the Internet" (Skok & Ryder, 2004). (OECD, 2001) define it as "The gap between individuals, households, businesses and geographic areas at

different socio-economic levels with regard both to their opportunities to access ICTs and to their use of the Internet for a variety of wide activities". Choudrie et al., (2005) indicate that the definition of the term 'Digital Divide' has widened since it has been identified as a factor causing differences between wealthy and poor countries, based upon gender, race, age and education (Edmiston, 2003; Skok & Ryder, 2004; Blackburn et al., 2005). Related to e-Government the digital divide between the different groups of citizens will result in sections of the society being not able to consume and benefit from e-Government outputs. Therefore they will be left behind and miss many advantages (OECD, 2003). In the literature the digital divide in the developing world is known to be a greater problem than in the developed world as the number of people who are not able to be connected and use the Internet is higher in percentage terms due to the deprived economical, educational and accessibility conditions. Notably the literature is concerned that the digital divide in the developed world is being concentrated in specific minority groups in the society such as people with special needs, old people over 60, whereas in the developing world the digital divide affects the majority of the society since large segments of people in developing countries are poor, illiterate and unfamiliar with technology.

Cultural Problems: e-Government is a national issue affecting the whole society in a country, the culture of the country plays an important role in the success of the project. Murray (2001) indicates that e-Governance is 20% about technology and 80% about people and organization. Sharifi & Zarei (2004) when reviewing Iran's e-Government place emphasis on understanding social and cultural barriers that determine the society's readiness for accepting changes in systems. Cultural problems can be divided into three different dimensions: (1) Social, (2) Organisational and (3) Political.

Social: Cultural issues related to citizens affecting the development of e-Government are many. The society being adapted to technology and being technology friendly having trust in online services and trust in Governments will affect its mentality in relation to being a consumer of e-Government. Other cultural factors could be gender and religious issue. In some societies Internet usage is associated with males. This includes a large number of Middle Eastern Countries (UNPAN, 2005; Akman et al., 2005).

Organisational: Within governmental agencies the culture of work of the public sector will affect the progress of e-Government. As discussed previously it will be an apparent problem and barrier in more advanced stages of e-Government, in particular the transaction and integration stages. Akman et al., (2005) in their study on e-Government in Turkey state "One of the key barriers to maximizing the potential offered by e-Government was the need to change individual attitudes and organizational cultures".

Political: Regimes ruling a country being democratic or undemocratic could be considered as a help or a barrier affecting the growth of e-Societies and the process of developing e-Democracy. A democratic government will desire to make all people connected and involved in electronic activities, on the other hand undemocratic governments will suppress people's attempts to participate in the decision making process and limit free access to information which contradicts the principles of e-Government. Reports Without Borders in their annual report which reviewed freedom of speech on the Internet around the world listed three Arabic countries out of 13 around the globe as enemies of freedom of speech because of the arrests and prosecution of members of the public for expressing their political views on personal website, Internet chartrooms and discussion forums, Jordan was listed as a country with noticeable problems in the same report (Reporters without Borders, 2007).

4.6 Testing and Validating the Model

Parameters included in different parts of the created generic model have been obtained from previous e-Government models in addition to existing e-Government literature. However it was necessary to test its validity and evaluate the created model. The chosen approach to test the validity of the model was by getting feedback on it from experts in the field of e-Government. This approach has been conducted by using a qualitative research method of interviews. However, the technique not only will achieve the purpose of gaining feedback on the model, it provides a valuable opportunity to consolidate understanding of e-Government by establishing communication with other e-Government academics and discussing different related issues within e-Government. Heeks & Bailur (2006) point out that one of the main reasons for the poor quality of existing e-Government research and models is due to the lack of communication between different e-Government researchers, they state "There are definitely signs of a lack of communication and a lack of legitimacy and recognition for e-Government research as a field".

4.6.1 Expert Interviews

Patton (1990) identifies three types of qualitative interviewing for research: the informal conversational interview, the interview guide approach and the standardized open-ended interview. Although the three types vary in their format and structure of inquiring, they have in common the fact that the participant's responses are open-ended and not restricted to choices suggested by the interviewer. Each type of qualitative interview has its advantages and disadvantages. In the standardized open-ended interview interviewers adhere to a strict script. There is a limited flexibility in the wording or order of questions. It is still considered a qualitative interview rather than a quantitative interview since the answerers are open-ended. This type of interviews is the best choice for evaluation purposes (Patton, 1987). Informal conversational interview in this type of interview questions emerge from the immediate context, so the wording of questions and even the topics are not predetermined. The major advantage is that the interview is highly individualized and relevant to the individual (Patton, 1990).

The objectives of the interviews were to mainly test and validate the e-Government model in addition to consolidating the understanding of the e-Government topic. To fulfil both objectives the interview type has been semi-structured using standardized in depth open-ended as the first and main approach in the interview to test the constructed model, in addition to using informal conversational interview at the end of the interview to discuss different issues related to constructed model and e-Government research in general. Healey & Rawlinson (1993) state that a combination of styles may be used within one interview they say "one section of an interview may ask a common set of factual questions ... while in another section a semi-structured qualitative approach may be used to explore responses".

Creswell (1998) suggests that the researcher when choosing participants to be interviewed should choose those who will make positive contributions, display leadership qualities and reveal independent thinking. Creswell (1998) says "For one-to-one interviewing, the researcher needs individuals who are not hesitant to speak and share ideas and needs to determine a setting in which this is possible. The less articulate, shy interviewee may present the researcher with a challenge and less than adequate data". Using Creswell's recommendations, selected candidates, have been e-Government experts who have been willing to share their experience and concerns, give their opinion on the proposed e-Government implementation model and they would be a rich source of information concerning e-Government. Such criteria for the participants will help to identify potential weakness within the model. Furthermore it contributes in its finalisation. To determine the quality of the participants, they have been chosen because they have at least one publication directly related to e-Government in a recognised academic Journal. Another important factor determining the choice of experts was their location. They had to be located in the UK to make sure that travelling would be possible to interview them. The procedure of finding experts' location was done by tracing author's details through reviewed e-Government publications and running an Internet search on their details.

Contacting participants has been by e-mail and they were asked if they would accept being interviewed to gain their feed back on the generic model for the management e-Government projects. In total 44 experts were e-Mailed. 15 out of the 44 replied. This makes the response rate ≈ 34%. From the people who replied 4 agreed to take part in

the interview. This makes the acceptance percentage ≈ 9%. All interviews took place at the universities where the experts work in the period between November 2005 and February 2006. Appendix 1 at the end of the research lists the names of contacted e-Government experts and participants' details in addition to information where the interviews took place.

4.6.2 Design of Interview Questions

Oppenheim (1992) and Burgess (2001) emphasised that a questionnaire must be easy for the respondent to answer fully, suitable with simple wording and be attractive. Oppenheim (1992) and Burgess (2001) emphasized that respondents should feel motivated to continue to answer further questions and to continue to cooperate. These factors have been taken into consideration when creating the interview questions. Visual aid in the form of an A2 graph of the model was provided to the participants in order to gain their feedback on the proposed model.

Standardised open-ended questions imply the exact wording and sequence of questions are determined in advance. Standardised open-ended questions have been used in the first part of the interview to determine experts' feedback on the constructed e-Government model. All experts have been asked the same questions in the same order; consequently this led to an increasing comparability of responses. The informal conversational interview approach has been used in the final part of the interview which was designed to make different arguments related to the constructed e-Government implementation model in addition to having general discussion about e-Government research in order to consolidate the understanding of the topic. Appendix 1 contains questions in the order used in the interviews.

4.6.3 Interviews Analysis

Qualitative interviews and their transcripts generally produce a large volume of material which must be condensed, categorized or otherwise interpreted and made meaningful and this may turn out to be one of the most costly and time-consuming aspects of the evaluation. If time and resources are limited, the use of standardized interview formats will make it easier to code and interpret interview results. There are

plenty of methods for analyzing and interpreting qualitative interviews. Kvale (1996) explains several analysis methods that include 1) meaning condensation, 2) meaning categorization, 3) narrative structuring, 4) meaning interpretation and 5) generating meaning through ad hoc methods. Patton (1987, 1990) also addresses a number of techniques for analyzing and quantifying qualitative interview data. The most proper method of analysis for any given study will depend on the purpose of researchers' evaluation and the nature of the gathered material, as well as the time and resources available for this part of the process. Some methods attempt to be more objective, while others depend more heavily on subjective judgements and insights of the researcher. Computer software programmes are available that can assist in categorizing interview statements or counting key words, which may allow some forms of quantitative analysis. For the case of this part of the research data collected through the interview was written up as notes during the interview. The method used to analyse the interview was basic descriptive method. All answers in the interviews have been compared together in order to gain different understandings and feedbacks on the model and its purpose. Coding analytical techniques have been reviewed however; it was not necessity to use coding methods.

4.6.4 Interview Results

a) The Need for a Comprehensive e-Government Model: All interviewed experts agreed on e-Government being a multidisciplinary not well defined topic and acknowledged that although there has been a growing amount of research in the past few years, there are plenty of topics still to be discovered. All participants agreed on the absence of a clear comprehensive e-Government model in literature. An explanation for that has been the different profile of different countries which makes e-Government a unique case whenever it is implemented. However, some experts put emphasis on categorizing countries based on their profile where this could be achieved in order to overcome the uniqueness of each e-Government project. Reviewed literature reveals that e-Government stakeholders and technologies are similar in different countries. Requirements and effects on organisations and society as well have been similar in concept across different countries with differences in the scale level of requirements and effects. Also when reviewing drivers, outputs and

barriers to e-Government these all have been similar in the literature with the absences and presence of some of the parameters based on the country's profile. All experts agreed on presenting such a model as necessary to have more understanding about e-Government. Furthermore its existence will add great value to the topic of e-Government.

b) The Validity of the Model: All experts found the model useful and easy to understand also the model presented an excellent starting point for any e-Government research since it gives a generic understanding of the topic. After analysing the interviews with experts it was found that the model had the strengths of being logical in structure, coherent and to some extent comprehensive, is easy to follow with clear inputs and outputs, successfully distinguishes plenty of overlapping issues concerning e-Government, finally the model divides the project into different stages with the indication of where each parameter is important.

Some concerns regarding the model have been that although the model includes most of the important topics in e-Government, still no one could include every specific aspect related to e-Government. Nevertheless specific aspects might be a subset of an element already included in the generic model. Other concerns included the thought that some parameters could be united together as one parameter. After analysing the experts' feedback, opinions and recommendations on the model, adjustments have been implemented to construct the final version of the model shown in figure 4.8.

c) Other Findings and Discussion: All experts emphasised the fact that there are many research opportunities within e-Government. They supported the e-Government model creation as a platform to comprehensively understanding e-Government. Dr. Lee-Kelley supported the need to understand the gap between supply and demand in e-Government. Professor Beynon-Davies also stated that investigating the gap between supply and demand sides especially in the developing countries will present a good research case.

4.7 Summary

The transformation from government to e-Government appears to be inevitable for most Governments around the world (Davison et al., 2005). Reviewed literature concerning e-Government is described as being bits and pieces from everywhere, there is not a solid theory behind e-Government (Heeks & Bailur, 2006). Even when defining it there are plenty of definitions from different perspectives (Ebrahim & Irani 2005; Gil-Garcia & Pardo, 2006). The overlap in literature between e-Government on a national, local and agency level regarding the requirements, problems and goals has created confusion in understanding it. However, e-Government is becoming a recognised area of knowledge with many research opportunities. A number of studies have been commissioned by different researchers and institutions presenting a rich field of information (Siau & Long, 2005). This rich source of information still lacks to be connected together in order to present a solid understanding for the topic due to plenty of reasons a major one has been the lack of knowledge building based on existing e-Government literature (Heeks & Bailur, 2006;2007). Still there have been some attempts to construct e-Government models. However, current models seem primarily to be useful for descriptions and classifications and not for explaining and exploring why and where (Jansen, 2005).

From here came the necessity for this chapter to present a comprehensive e-Government implementation and management model that will bring a better understanding of the topic. Also it will create a solid starting point for this research in order to recognize and be able to analyse existing problems when researching the gap between supply and demand sides of e-Government. The created model clearly identifies e-Government drivers and outputs, distinguishes between responsibilities and duties between central government and agencies and how they interact with each other. Finally the model presents the development of e-Government over time in different stages.

Chapter 5

Understanding the Demand Side of e-Government and the Development of Citizens Adoption Model

5.1 Introduction

The provision of e-Government services online by government agencies is known as the supply of e-Government. However, the usage of e-Government is referred to as the demand side of e-Government. The goal of this chapter is to understand the problem of **'the gap between supply and demand in e-Government'** in addition to exploring citizens' needs in order to adopt e-Government. The first step is to highlight the problem by considering the e-Government user as a consumer who has demands level (informative, interactive, transaction and integrative) on e-Government services. e-Government literature explains that existing variations between users demand level on e-Government services is influenced by different variables. The second step is to identify the different variables that might affect the demand level on e-Government services. Identified variables will be hypothesised and presented in a linear model (e-Government citizen adoption model) as variables affecting the demand on e-Government.

5.2 Understanding the Demand Side of e-Government

5.2.1 e-Government and People

The awareness of e-Government is increasing, governments and societies all around the globe are engaging with a digital future for the public sector. Government agencies are using technology to enhance citizens' access to government services (Mahrer & Krimmer, 2005). Serving citizens and achieving better communication with them is one of the core goals of e-Government, this has been evident in e-

Government definitions proposed by the UN, OECD and other researchers and governments. Furthermore, one of the main drivers of e-Government in the developed countries was the response to e-Society needs. In order for Governments to achieve the goal of being citizen focused, citizen-centric strategies are very important to ensure that e-Government users will be able to consume a government's services. McNeal et al., (2003) say "Beyond exploring the communicative functionality of e-Government systems, the motivations for deploying e-Government can, consequently, result in constructive or destructive outcomes depending on how careful and citizen-centric the deliberation is when deciding to implement e-Government".

Consequently most governments in the industrial and democratic countries understood the importance of establishing citizen centric strategies. President Bush of the USA is quoted as saying that e-Government will "Shift power from a handful of leaders in Washington to individual citizens" (Bush, 2001). The extent of the reality of this statement may be demonstrated by the actual rate and types of services accessed by the population in the USA and the propensity of central government to meet that demand.

5.2.2 CRM to Achieve Citizen Centric Outputs

Customer Relationship Management (CRM) is a profit-driven business strategy, which helps companies to better serve customers and improve their understanding of customers' needs (Larsen & Milakovich, 2005). From the CRM perspective, the customer is an individual with a unique set of interests and needs; he/she has the right to customized, quick and convenient service. However, the Internet offers a tool for the private sector to provide information and deliver services for their customers in a quick and convenient way based on their needs, achieving the principles of CRM. In relation to the public sector as previously discussed the concept of e-Government originally came as an extension for NPM, nevertheless CRM is at the heart of NPM (Damodaran et al., 2005). Governments around the world in leading countries started concentrating on adapting CRM principles on their web based services. The concept Citizen Relationship Management (CzRM) emerged as an equivalent public sector version of CRM in the private one. CzRM focuses on providing citizens with timely consistent responsive access to government information and services, using the

channel that the citizen prefers. CzRM promises to strengthen the links and cooperation between governments and their citizens (Milakovich & Gordon, 2004).

5.2.3 Do People Really Want e-Government Services?

By providing government services online through the Internet, successful e-Government implementers around the world assume that they are providing people with fast responsive services that will fit the citizen's life style and respond to his needs. This might be true for segments of any society who are more adaptable and who have ICT and are familiar with EC application. However, recent research from around the world suggests that the majority of the people do not seek and demand transactional, low cost, fast response services. Instead people are more comfortable with basic informative online information. Furthermore most people would prefer to interact in traditional face-to-face methods with government agencies. Research also indicates that different variables such as Trust in the Internet, awareness of e-Government, ease of use of service and many other variables, directly affect the demand level and intention to use e-Government services whether informative, interactive, transactional, or integrative.

A) Majority of People Prefer Traditional Methods to Interact with Government:

A research paper by Kampen et al., (2005) highlighted the mismatch between governments and people's perspective on e-Government. This mismatch is leading governments into adopting new online services thinking that they are responding to people's needs. However, people have no need for such services. Kampen et al., (2005) when they asked Flemish[11] citizens to choose between:

- The simplification of administrative procedures for obtaining licenses, subsidies and other services.
- The possibility of government putting more services on the web.

A clear majority of 63% preferred the simplification of procedures over the increasing of the number of public services on the Internet, 9%. About one in five of the Flemish citizens, 18%, assigned equal value to either alternative or were otherwise unable to choose between them. It is only among the professionals and executives that a

[11] The Flemish Region: Is one of the three official regions of the Kingdom of Belgium – alongside the Walloon Region and the Brussels-Capital Region. It has a population of approximately 6 million.

significantly larger group prefers increasing the amount of services on the web, 31%, yet even in this professional segment of the population a majority of 55% prefers the simplification of procedures. A response to a different question indicated that a low percentage of 27.3% wanted all services to be available online. However, 47.5% of respondents would prefer traditional face to face contact with Government by opening in weekends and more work hours than providing services online, table 5.1 summarises Kampen et al., findings.

Table 5.1: Elements of e-Government judged by Flemish public in 2003. Kampen et al., (2005)

	Totally or Mostly Agrees With Left Statement	*Undecided*	*Totally or Mostly Agrees With Right Statement*	
The government should simplify the administrative procedures for obtaining licenses, subsidies, and other services.	62.8%	18.0%	19.2%	The government should make more services available by the Internet.
The government should use the Internet primarily for enlarging citizen participation.	15.8%	32.4%	51.8%	The government should use the Internet primarily for improving public services.
The government should strive to make all of its service available by the Internet.	27.3%	25.2%	47.5%	Public administrations, services, and counters should be open in the evening and in weekends.

These findings indicate that although governments are pushing hard to provide online services to citizens, the majority of citizens still prefer traditional interaction methods with governments rather than through the Internet.

B) Majority of People Prefer Low Level e-Government Services: A study conducted by Thomas & Streib (2003) on citizen interaction with e-Government in the USA revealed that citizens accessed governmental websites more often to obtain information than to transact. In addition, more experienced users were more likely to visit government websites for information and to complete transactions. The procedure of governments providing services to people to a higher level than their actual demand is creating a mismatch between people's demand and government's supply.

C) Government and People have Different Perspective on e-Government Services: Research findings in the USA confirmed that despite some commonalities, citizens and bureaucrats differ substantively in their perspectives on e-Government (De Ruyter, 2000; Welch et al., 2005). Citizens are less enthusiastic about e-Government, less interested in greater convenience and more information, instead are more concerned about security and privacy. Bureaucrats are more enthusiastic, drawn by the promise of the technology and confident of their ability to use it effectively but cognizant of operational constraints and their responsibility to equitably provide services, information and access. Welch et al., (2005) explain that citizen's pessimism about privacy and security and their more general distrust of government overwhelm their desire for technology that will improve service and information dissemination. Welch et al. (2005), suggests that the reason people are not using e-Government services provided by the public sector is due to the fact that "bureaucrats tend to have a top-down orientation toward the implementation of e-Government. Understanding these differences between citizens and bureaucrats and the reasons for them is a critical public management issue".

5.3 The Gap between Supply and Demand of e-Government

The low intention of people to use e-Government services is due to people's real needs being almost neglected by governments and most research. The idea of government declaring itself as a supplier of services, adopting a citizen-centred strategy in order to achieve social and economical development goals has recently caught the attention of numerous e-Government researchers who suggest that governments in general assume that people demand e-Government services, whereas the actual demand side of e-Government has been almost ignored in most of the developing and developed countries. This however is creating a mismatch between the demand and the supply of e-Government (Sealy, 2003; Reddick, 2004; Tung & Rieck, 2005; Reddick, 2005).

Deursen et al., (2006) refer to a recent survey within the EU indicating the scale of this problem. Table 5.2 shows the percentage of individuals who used the Internet in the EU within the previous 3 months of conducting the survey. Table 5.3 shows the

actual use of the Internet by surveyed individuals for obtaining information from public authorities' websites.

Table 5.2: Percentage of individuals who used the Internet in the EU. Deursen et al., (2006)

Country	DK	DE	EL	ES	FI	IE	LU	NL	AT	PT	SE	UK
2003	71	54	16	37	66	31	53	64	41	26	77	61
2004	76	61	20	40	70	34	65	69	52	29	82	63

Table 5.3: Percentage of individuals who used the Internet and e-Government. Deursen et al., (2006)

Country	DK	DE	EL	ES	FI	IE	LU	NL	AT	PT	SE	UK
2003	39	23	6	20	39	10	25	15	14	10	41	19
2004	39	31	7	22	43	11	36	17	18	10	36	20

Interesting findings are exposed when comparing both tables. These tables show that of the 15 EU countries there is a big gap between the potential and actual usage of online governmental information.

The scale of this gap is expected to be much larger within developing countries since the supply-side involves variables including what is available, the quality and usability of the services (Centeno et al., 2005). These variables are usually related to the very low standards in most developing countries (UN/ASPA, 2002; UNPAN, 2005; Siau & Long, 2006). Add to these problems the fact that most governments and services are lacking the ability to address citizens' true needs and requirements. In China only 2.7 percent of Internet users frequently require e-Government services. This statistic reflects the scale of the problem in the developing world since about 97.3% of Internet users in China will not require e-Government services (Wei & Zhao, 2005). Not surprisingly Accenture's, 2005 international e-Government study concludes that because governments do not understand citizens' needs this has led to a situation where "Governments are making service investment decisions without a clear view of the outcomes they affect".

5.3.1 Resolving the Gap Problem

In order to resolve the problem Governments must understand this existing gap between supply and demand, identify people's needs and fulfil them so the utilization of e-Government will be at its highest percentage and level. Lee-Kelley & Kolsaker

(2004) propose that e-Government creation must be driven by and be a response to people's needs. They state:

> "Success requires citizen's recognition and acceptance of the relevance of the value proposition being offered and thus the degree of fit between supply assumptions and usage drivers and subsequent provision and adoption is of critical importance. We propose that as e-Government provision becomes more widespread, success will have to be redefined and measured against criteria that reflect the degree of fit between provision and usage. Such an approach has the potential of being less politically driven than supply-based measures and therefore of greater validity and relevance".

Charbaji & Mikdashi (2003) when reviewing e-Government in Lebanon, which is a developing country with a similar profile to Jordan, indicate that in order to participate and engage in e-Government activities people must overcome cultural and constitutional challenges not technological ones as most governments assume. e-Government research suggests that governments who paid attention to the demand side of e-Government have succeeded in achieving enormous benefits leading to an effective e-Government output. Canada for example in the year 2005 was categorized as the most e-Government-enabled country for the past four consecutive years (Accenture, 2005). Reddick (2005) explains what lies behind this Canadian by saying "The most likely reason for this is Canada's regular surveys of citizens and businesses of attitudes and needs that appear to be the most extensive of the countries".

5.3.2 The Call for Research to Understand the Demand Side

Research on the demand side of e-Government was either a comparison of consumption between different countries (Botterman et al., 2003; Lassnig & Markus, 2003; Tung & Rieck, 2005), or a study for a specific service or of the demand from a small segment of the population. Hinnant & O'Looney (2003) incorporate demand side considerations into their study of the pre-adoption interest in e-Government personalization. Their research is however directed at a specific class of innovations related to e-Government services, i.e. the personalization of e-Government services, rather than on e-Government service adoption in general. Seifert & Petersen (2002) call for a research that will understand what the customer needs in order to achieve effective e-Government output and reform. Calls for similar research arose from the conclusion of different published e-Government studies carried out around the world. Sealy (2003) states "e-Governance should address the need to focus social

investigations on adoption and adaptation of the new technologies on the social fabric of society at large". Reddick (2005) also states "while most of the existing literature focuses on the supply side, it is vital to understand the demand of citizens for e-Government". Zhang et al., (2005) say "Future research may need to raise the question of how important each benefit item is for stakeholder groups to improve their daily operations and overall e-Government function". Tung & Rieck (2005) articulate "While a significant body of academic literature exists on e-Government services, surprisingly little is known about why and under what circumstances citizens and corporations adopt them. The focus of the academic literature on e-Government up to date has rather focused on the supply side of e-Government".

5.3.3 The Call for Research to Investigate the Gap

Not only is there only a small amount of research dedicated to the understanding of the demand side of e-Government, hardly any researches attempted to measure and understand e-Government from the two different perspectives. Dr. Liz Lee-Kelley when interviewed emphasised the need of research in this area especially in the developing countries where it is expected to find huge gaps between governments and people. Lee-Kelley & Kolsaker (2004) when comparing the development and progress of e-Government between the UK and Singapore, highlighted that progress should be evaluated in terms of both provision and usage. Furthermore they suggest that hitherto the 'fit' between supply assumptions and usage drivers has been explored inadequately. They stated in their study: "We conclude that societal and social issues may be key to truly successful e-Government and that measures of success should shift in focus from provision to usage. In doing so, we proffer a model of 'e-Government usage drivers' as a basis for future, holistic benchmarking of e-Government progress". Reddick (2004) in his recommendation for future research work declares "With the increased focus of governments on demand issues, this should lead to more research on what citizens want online and provide a greater connection between demand and supply for e-Government". Welch et al., (2005) also emphasise the need of research in this area of e-Government. They state "Future studies should continue to examine how citizens and bureaucrats change or maintain their attitude toward e-Government and see whether their views become divergent or convergent".

In summary, previous statements indicated that people's actual needs in order to adequately use e-Government have not been well explored especially in the developing countries. One of the major criticisms of recent e-Government projects is the top-down bias that impacts on decisions about what type and nature of information and services are to be provided (McNeal et al., 2003). Thus, e-Government tends either to ignore the citizen's perception or to misunderstand it. Moreover, existing academic literature on e-Government seems to pay limited attention to the citizen's perception. Studies on transparency of information, service delivery and reforms (Pandey & Bretschneider, 1997; Ho, 2002; Holden et al., 2003) in general are based on websites content analysis or surveys targeting government officials. Although some studies take a more citizen-centric approach in order to try to understand the demand side (Graafland-Essers & Ettedgui, 2003), such studies have imperfect analytical methodologies for understanding the impact of specific factors. Current e-Government studies tend to ignore prospects for integrating insights from relevant parts of e-Government literature. For example, public administration and political science researchers often overlook literature on information management systems and rarely integrate social and network dimensions into the study of e-Government (Norris & Lloyd, 2004).

To fill these gaps in existing research, this exploratory study intends to establish an e-Government adoption model that takes into account both supply and the demand sides of civic involvement in e-Government. The next section of this chapter identifies variables that will make online services available impact on the willingness of citizens to use e-Government. Furthermore, the identification of such variables will aim to integrate insights from allied fields of e-Government research, by examining the social aspects of civic engagement and integrating it to the implementation and the supply of e-Government in further discussion in the research. The examination of a citizen adoption model will employ both simple and advanced analysis including regression analysis to ascertain both the direction and significance of various variables impacting online civic engagement, thus moving beyond mere descriptive studies.

5.4 Background to People's Intention to Use (People's Needs):

A number of attempts have been presented by e-Government literature which has offered different frameworks that explain how people's demand level for e-Government services is affected by many variables, these variables are described as being the essential needs for people in order to consume e-Government. The following section of the research will recognize previous studies that highlighted people's needs. This will facilitate choosing the variables which are applicable for the case of Jordan. Chosen variables will be hypothesised and tested.

5.4.1 Diffusion of Innovation Theory

Recent e-Government research (Carter & Belanger, 2004) to understand the variables that influence people to adopt (Use) e-Government was based upon previous technology adoption research, specifically Rogers' (1995) Diffusion of Innovation Theory (DOI). DOI has been frequently used in IS research to explain user adoption of technological innovations. Diffusion refers to "the process by which an innovation is communicated through certain channels over time among the members of a social society (Rogers, 1995)". According to DOI, the rate of diffusion is affected by an innovation's relative advantage, complexity, compatibility, trialability and observability. Rogers (1995) theory was based upon previous studies; one main study was Moore & Benbasat's (1991) Perceived Characteristics of Innovating (PCI). Moore & Benbasat identified eight PCI variables that influence the diffusion of an innovation. These are relative advantage, compatibility, ease of use, result demonstrability, image, visibility, trialability and voluntariness.

5.4.2 Technology Acceptance Model

Davies (1989) Technology Acceptance Model (TAM), was used in much IS research to study user acceptance of technology, it was then used to study employees' acceptance of new technology systems in organizations between different profiles of employees (Jackson et al., 1997; Chau, 1996; Doll et al., 1998; Karahanna & Straub, 1999; Venkatesh & Davis, 2000; Venkatesh & Morris, 2000). TAM was also implemented to investigate peoples adoption of EC (Gefen & Straub, 2000; Moon &

Kim, 2001; Gefen et al., 2003; Pavlou, 2003). More recent research by (Schaupp & Carter, 2005; Carter & Belanger, 2005) reviewed TAM along with DOI to try and understand people's needs which will provoke them to utilise e-Government. TAM by Davis (1989) shown in figure 5.1 was based on two main drivers that make people use a technology or a system these are:

- Perceived usefulness (PU).
- Perceived ease of Use (PEOU).

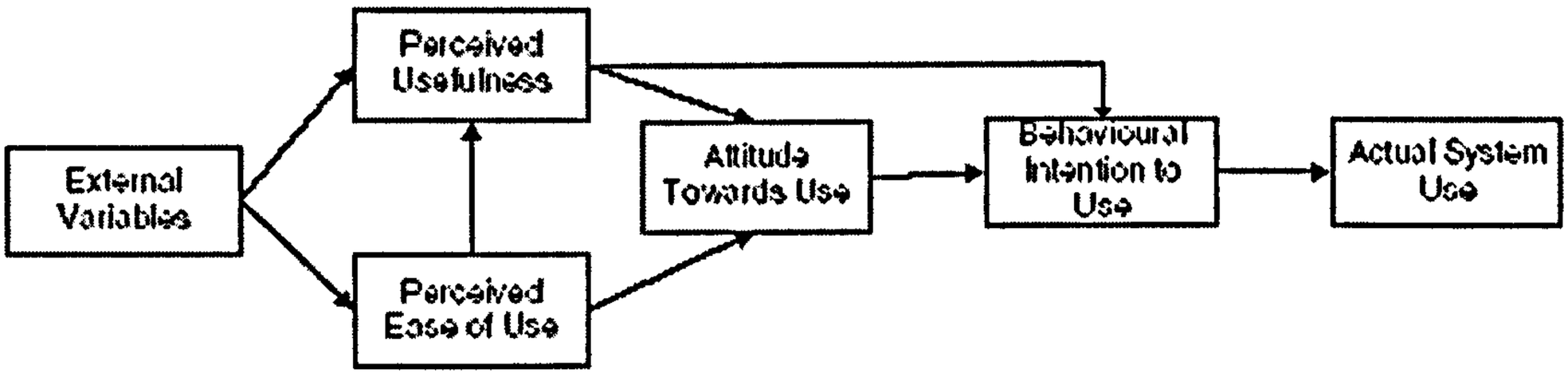

Figure 5.1: TAM model. Davis (1989)

Davis (1989) defines PU as "the degree to which a person believes that using a particular system would enhance his or her job performance" and PEOU as "the degree to which a person believes that using a particular system would be free of effort". These constructs reflect users' subjective assessments of a system, which may or may not be representative of objective reality. System acceptance will suffer if users do not perceive a system as useful and easy to use (Davis, 1989).

5.4.3 Carter and Belanger's Citizens Adoption Model

Carter & Belanger (2005) conducted a research on variables influencing citizens to adopt and utilize e-Government. Carter & Belanger (2005) combine TAM and DIO theories to present a citizens adoption model for e-Government services. Carter & Belanger's findings indicated that Perceived Ease of Use, Compatibility and Perceived Trustworthiness are effective variables that will positively influence the implementation of e-Government between people in the USA. More recently Schaupp & Carter (2005) studied the intention between students in the USA to adopt e-Voting which is described as being a very advanced transaction service of e-Government. Their study was based on the model presented by Carter & Belanger. Schaupp &

Carter found that Perceived Usefulness, Compatibility and trust are effective variables in determining whether those studied would be likely to adopt e-Voting.

5.4.4 Other e-Government Research of People's Needs

One interesting framework was presented by Lee-Kelley & Kolsaker (2004) figure 5.2. The Lee-Kelley & Kolsaker model indicates that governments are concentrating on issues concerned with enabling service delivery and connecting people when implementing e-Government, while people on the other hand have other needs that they consider before starting to implement e-Government services, such as the cost of connection, the trust in government, the quality of service and others. These needs are almost neglected by Governments. Lee-Kelley & Kolsaker conclude that if governments concentrate on people's needs this will increase the demand and the intention to use e-Government.

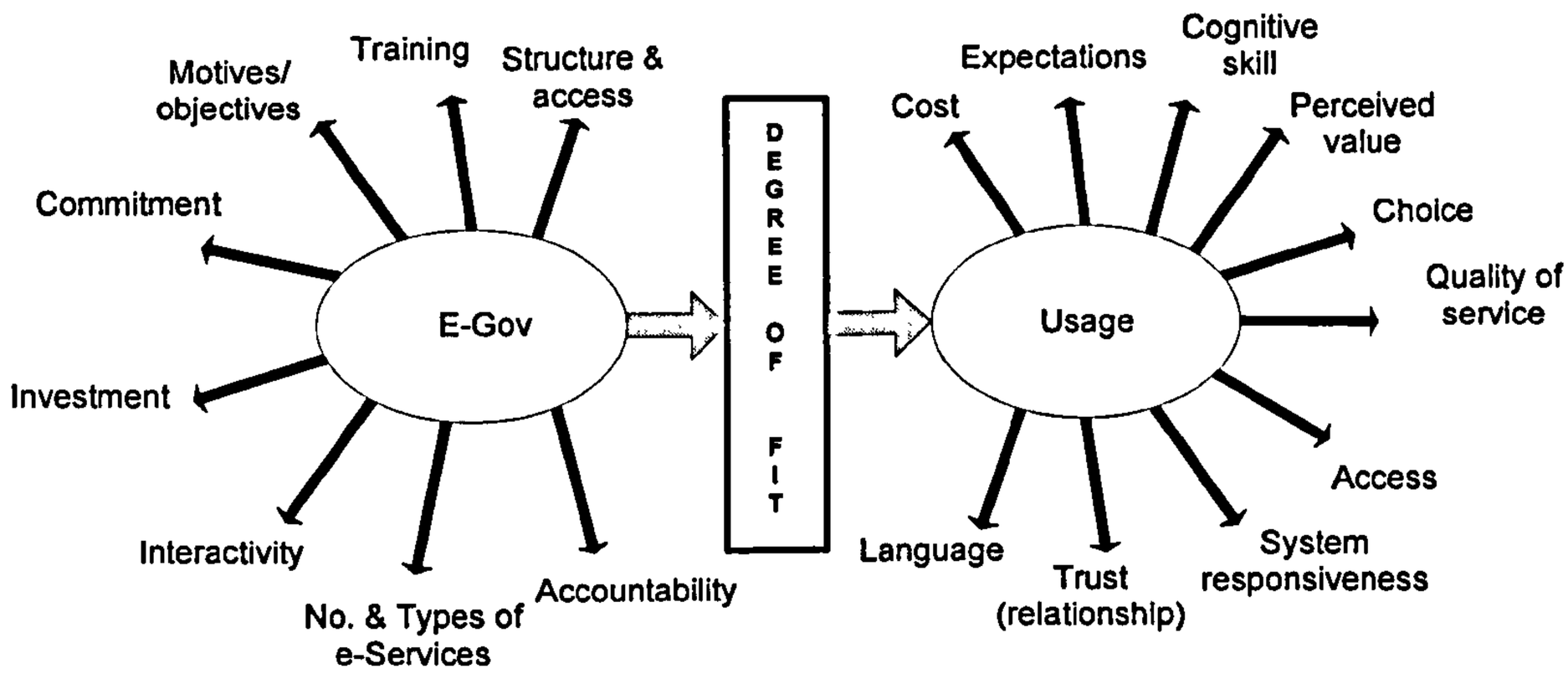

Figure 5.2: Degree of fit between e-Government and people. Lee-Kelley & Kolsaker (2004)

Centeno et al's., (2005) review of e-Government within the EU, recommended that governments in Europe should start to concentrate on citizen's needs in order to make e-Government more functional in member states. Centeno et al., (2005) clearly state that an understanding of people's needs is something difficult to obtain. Nevertheless they suggested emerging trends in needs for e-Government services divided into three major categories:

- Needs related to service provision.
- Needs related to service delivery.
- Needs related to access.

Wei & Zhao (2005) when reviewing citizen requirements to adopt e-Government in China developed a formwork shown in figure 5.3.

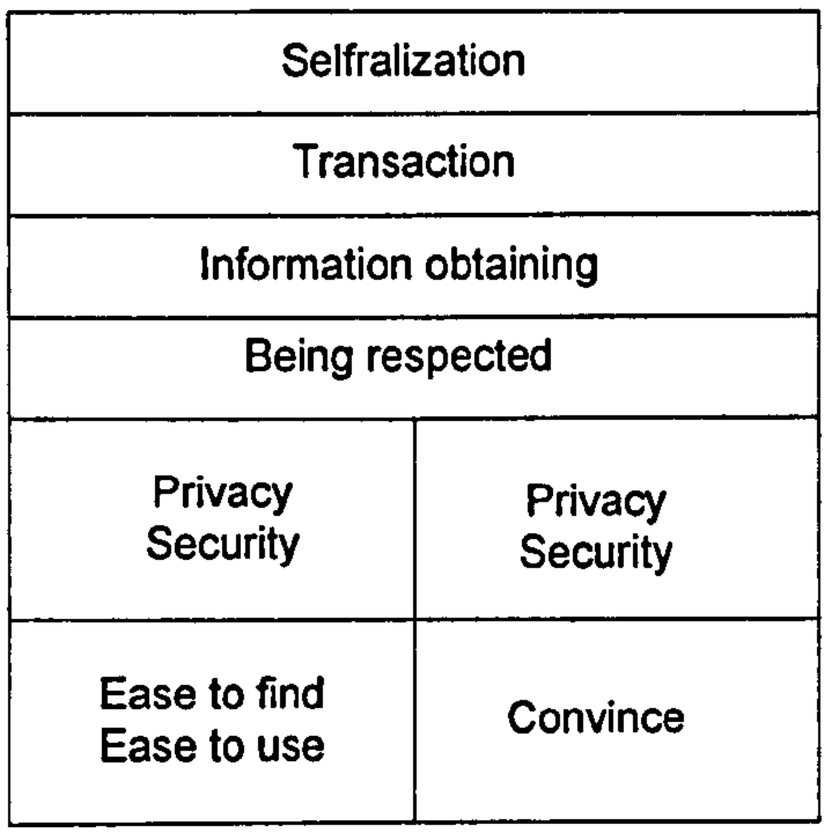

Figure 5.3: Framework of citizens' requirement. Wei & Zhao (2005)

Choudrie et al., (2005) also reviewed previous studies that attempted to understand people's needs in order to consider consumers of e-Government within the rural UK. Variables that they found important are listed Table 5.4

Table 5.4: Variables influencing e-Government adoption in the UK. Choudrie et al., (2005)

Constraint	According to e-government literature	According to empirical findings in the UK
The citizens perspective		
Lack of internet access	Darrell (2002)	Hillingdon; Conwy
Disparities in computer knowledge	Sampson (2002)	Hillingdon
Generation gap	Fang (2002)	Hillingdon
Lack of awareness	Reffat (2003)	Hillingdon
Language barrier	Fang (2002)	Hillingdon
Security fears	Harris and Schwartz (2000) and Jarvenpaa and Tractinsky (1999)	Hillingdon; Conwy
Lack of trust	Bonham *et al.* (2003), Navarra and Cornford (2003) and Bhattacherjee (2002)	Hillingdon; Conwy
Un-user-friendly web sites	Margetts and Dunleavy (2002)	Hillingdon
The government's perspective		
Lack of finances	*Federal Computer Weekly* (2001)	Hillingdon; Conwy
Lack of skills and technology	Not identified	Hillingdon; Conwy
Political pressures	Not identified	Hillingdon; Conwy
Data protection and security laws	Bonham *et al.* (2003) and Harris and Schwartz (2000)	Hillingdon; Conwy
Staff resistance to change	Margetts and Dunleavy (2002)	Hillingdon; Conwy

5.5 A New Citizen Adoption Model: the Case for Jordan

Based on the comprehensive review of previous e-Government studies, the important potential variables (Independent Variables) that will affect people's Intention to Use (Dependent Variable) e-Government services have been identified. The independent variables chosen are trust in the Internet, trust in government, capability, compatibility, awareness and previous experience. These variables will have a direct effect on the level of demand on e-Government services whether informative, interactive, transaction and integrative. Figure 5.4 presents the research model presenting the relationship between dependent and independent variables. The research model will be tested on a sample of Internet users (e-Citizens) in Jordan representing the e-Society.

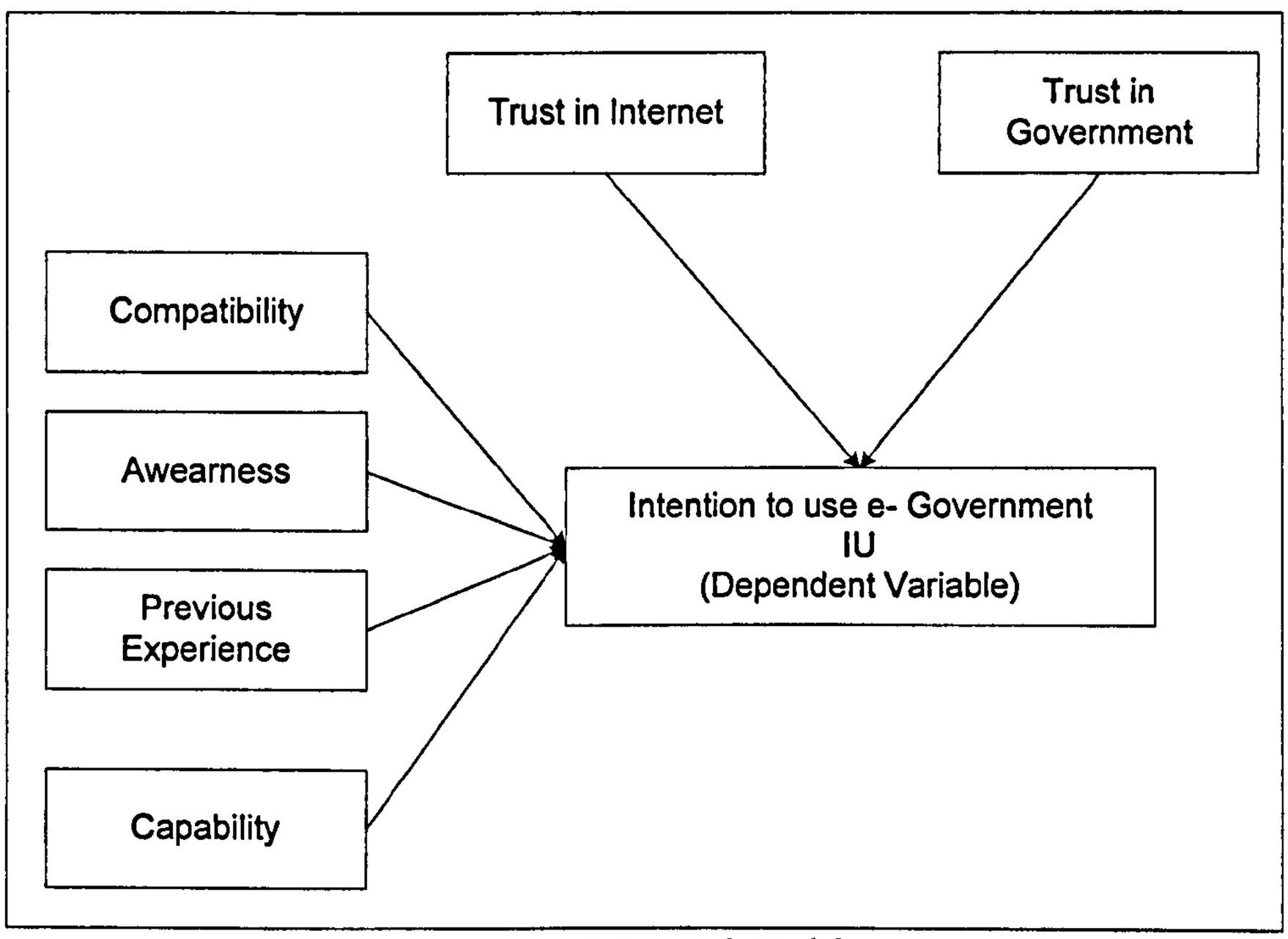

Figure 5.4: Research Model

5.5.1 Dependent Variable

Intention to Use: In order to measure the gap between the demand and supply side the first step is to measure the actual demand on e-Government services from people. Demand is measured in what is called the **Intention to Use (IU)** e-Government services variable. IU will measure the demand in four main categories of service

levels which are informative, interactive, transaction and integrative. IU is also the dependent variable that will be affected by hypothesised needs of people. Therefore it will be also used to measure the relation between the chosen independent variables referred to as people's needs.

5.5.2 Independent Variables

Independent variables are the variables that are affecting people's levels of demand on e-Government services, they are also described as people's needs for using e-Government, that is because if these needs are satisfied for citizens it will increase people demand and usage of e-Government services.

a) Trust in Government and the Internet: Trust has been revealed as an important variable determining people's demand on e-Government in a number of e-Government studies. Welch et al., (2005) review three modes of trust production, developed by Zucker (1986) that will determine people's trust when interacting with Government. These are:

- **Characteristic based trust:** produced through expectations associated with personal characteristics such as race, age, or gender.
- **Process-based trust:** is garnered through expectations of reciprocity in which the giver essentially obligates the receiver to return goods or services of equivalent "intrinsic or economic value" (Thomas, 1998).
- **Institution-based trust:** either directly through adoption of professional standards or codes of ethics or indirectly through the observance or administration of laws and regulations.

Welch et al., (2005) conclude that in the virtual world characteristic-based trust is difficult to establish as personal characteristics are more hidden, leaving institution-based and process-based trust as primary areas of interest. Their argument leads to the conclusion that trust in e-Government is divided into two main categories:

1. Trust in the government (Institution-based Trust): Is the trust level that people have in their public sector agencies and government.
2. Trust in the Internet (Process-based Trust): Is the trust level that people have in the Internet and its applications.

Carter & Belanger (2005) support Welch et al., (2005) argument by stating that successful diffusion and acceptance of an e-Government service is contingent upon citizen trust in both the government and the technology that supports the service. Carter & Belanger demonstrated that trust in government and the Internet will increases demand on e-Government when analysing their USA based survey. More recently Schaupp & Carter (2005) examined the adoption of e-Voting (Type of e-Government services) in the USA, where trust in government and trust in the Internet also have been found to be significant variables influencing the adoption of e-Voting. Other research was concerned with the importance of trust in government in affecting demand levels on e-Government (Bonham, et al., 2001; Navarra & Cornford, 2003; Bhattacherjee, 2002).Previous research (Lee & Turban, 2001; McKnight et al., 2002; Pavlou, 2003; Van Slyke et al., 2004) demonstrated the positive effect of trust in the Internet on increasing the level of demand on EC activities.

Trust and Developing Countries: In the developing countries people in general have low standards of trust in their governments. Peters (1999) explains that this is because of the gap between public expectation and perceived governmental performance, economic performance, the role of mass media, political scandals, changes in social capital and culture and perceived policy failures. Also most of the people in developing countries are not involved in EC application; this is believed to have an impact on people trusting the Internet which is affecting their demand on e-Government. Jaeger & Thompson (2004) found that only one-third of the people who have used EC and one-fifth of the people who do not use EC believe that the government can keep private information shared through the e-Government safe and confidential. Non Internet users generally have less confidence in information and people online and in the institutions running the Internet. They are also more anxious about the possible risks. Distant from the technology, they are most uncertain of its value. The risks experienced in using the Internet are more often less than the risks imagined by non-users, who also often underestimate the benefits of the Internet (Dutton & Shepherd, 2006). Trust in the Internet and government are expected to be some of the Jordanian people's concerns that need to be addressed in order for them to consume e-Government. Trust in the Internet and trust in the government are hypothesized as having a positive relationship with intention to use.

b) Compatibility: Rogers (1995) defines lack of compatibility as "the degree to which an innovation is seen to be incompatible with values, experiences, beliefs and needs of adopters". OECD (2003) in their published review "Engaging Citizens Online for Better Policy-making" highlights the cultural problem standing as a barrier to people's implementation of e-Government. Research suggests that citizens who are e-savvy and use the Internet regularly to communicate and complete transactions are keen to interact with other people, businesses and government using the Internet (Carter & Belanger, 2005). This is because when people adopt the Internet they will have higher compatibility levels with its applications.

Previous research investigating variables affecting citizen's intention to use online applications concluded that compatibility is a significant variable which had a positive effect on EC and e-Government adoption (Van Slyke et al., 2002; Carter & Belanger, 2004; Schaupp & Carter, 2005; Carter & Belanger, 2005). Compatibility is one of the most important variables to be measured since it will reflect the cultural acceptance of e-Government in the e-Society in Jordan. Cultural barriers for citizens are not explored in research on developing countries. Also since compatibility encapsulates a citizen's perception of the congruence of e-services with his/her lifestyle, measuring compatibility will reflect the Jordanian e-Society's intention to consume EC activities as well. Therefore compatibility is hypothesized as having a positive relationship with intention to use.

c) Awareness: Awareness in this research is a variable associated with people's knowledge about e-Government and the availability of electronic services online. Recent research (Charbaji & Mikdashi, 2003) conducted in Lebanon, which is an Arabic country in the Middle East with a similar profile to Jordan, indicted that awareness of the existence of e-Government services is positively related to the usage of e-Government services. Adeshara et al., (2004) found that awareness is a variable that will increase the demand on e-Government services between SME's within the UK. They concluded that the UK government is not putting effort into promoting e-Government services which has let to low demand on e-Services. Jaeger (2003) previously indicated that the lack of awareness in the UK is a problem affecting the progress of e-Government since people and businesses don't know that the services already exist. Jaeger states "The United Kingdom, for example, is spending billions of

pounds to meet the goal that all public services that can be performed online will be available electronically by 2005, yet is finding that most citizens and businesses are unaware of the services available or are reluctant to use them". Therefore it was hypothesised that the awareness variable is considered to be a need for people in order to use e-Government.

d) Previous Experience: Previous experience with e-Government is a variable associated with people who have been previously engaged with e-Government, it will measure their satisfaction with e-Government services. The Jordanian e-Government project started in the year 2001. It is expected that large number of Internet users have interacted with e-Government and this has affected their demand. Reddick (2005) in his research includes the question "Are citizens having a positive experience when they use e-Government?" as an important variable to encourage people to move from the street level to the server's level. Nevertheless, Reddick encourages governments to add value to services provided online, he concludes that a higher level of perceived relative advantage increases citizens' intentions to use state e-Government services. Jaeger & Thompson (2004) emphasise the importance of citizens having good experience with e-Government services since citizens' experience will not only affect the user but the whole society. Jaeger & Thompson state "When a group of people in a small world shares the same view that e-Government information is not worth the effort to find or use, then social norms of not using e-Government are created. With social norms devaluing e-Government, the worldviews of the individuals in the small world will mostly hold to that viewpoint".

Welch et al. (2005) acknowledged in their research findings that citizens' experiences and satisfaction with e-Government is positively associated with demand on e-Government services. Similarly to people, businesses as well are affected by previous experience with e-Government. A survey conducted in the UK to measure Business acceptance of e-Government services by Adeshara et al. (2004) indicated that business in general thinks that e-Government services are not effective because of the huge amount of quantity and the poor quality of information provided on government websites. This has led to a substantial decrease in the demand for e-Government services. Therefore it was hypothesised that a previous experience variable is considered to be necessary in order for people to use e-Government.

e) Capability: Centeno et al., (2005) refer to the citizen capability as "needs related to access". The Capability variable is described as reflecting the e-Society's financial and technological (Skill) ability to connect online and establish engagement with e-Government services. Lee-Kelley & Kolsaker (2004) indicated that that the cost of the Internet is a consideration for citizens before they will adopt e-Government services. Off course since the survey (online questionnaire) will be conducted on the e-Society in Jordan all of the sample will have Internet access and Internet skills. However, the dominant skill and access capability characteristics of participants in the online questionnaire will reflect the capability required for them in order to respond to the questionnaire which in practice is in some ways similar to an interactive online service. Participants' perceptions of Internet prices as well as their credit card ownership will also reflect the Jordanian society's capability to adopt e-Government. Table 5.5 summarises the independent variables that will have an effect on people's intention to use e-Government.

Table 5.5: Proposed variables affecting citizens demand on e-Government (Needs)

Variable	Description	Reference
Trust of the Internet	Trust level that people have in the Internet and its applications.	(McKnight et al., 2002; Carter & Belanger, 2005; Schaupp & Carter, 2005; Choudrie et al., 2005; Wei & Zhao, 2005)
Trust in government	Trust levels that people have in their public sector agencies.	(Pavlou, 2003; Carter & Belanger, 2004; Carter & Belanger, 2004b ; Van Slyke et al., 2004; Choudrie et al., 2005; Wei & Zhao, 2005; Carter & Belanger, 2005; Schaupp & Carter, 2005)
Compatibility	Degree to which an innovation is seen to be compatible with existing values, beliefs, experiences and needs of adopters.	(Gatignon & Robertson, 1985; Lancaster & Taylor, 1986; Eastlick, 1993; Taylor & Todd, 1995; Nedovic-Budic & Godschalk, 1996; Van Slyke et al., 2002; Carter & Belanger, 2005; Schaupp & Carter, 2005)
Awareness	People's knowledge about e-Government project and the availability of electronic services online	(Reffat, 2003; Charbaji & Mikdashi, 2003; Jaeger, 2003; Adeshara et al., 2004; Choudrie et al., 2005)
Previous experience	Measure of people who experienced e-Government services satisfaction and their perception of those services.	(Lee-Kelley & Kolsaker, 2004; Jaeger & Thompson, 2004; Reddick, 2005; Welch et al., 2005)
Capability	People's needs related to accessing e-Government from a financial and skill (literate) perspective.	(West, 2002b; Lee-Kelley & Kolsaker, 2004; Centeno et al., 2005)

5.5.3 Hypothesis

In summary, model and hypotheses testing was conducted with one dependent variable IU and six independent variables these are trust of the Internet, trust in government, compatibility, capability awareness and previous experience. The basic hypotheses for this part of the research are presented in Table 5.6.

Table 5.6: Research Hypotheses

Hypothesis #	Hypothesis	Construct
Hp1	Most of the e-Society would prefer low levels of e-Government services.	**Intention to Use (IU)**
Hp2	People with high trust in the Internet will have more intention to implement e-Government.	**Trust in the Internet**
Hp3	People with high trust in the Government will have more intention to implement e-Government.	**Trust in Government**
Hp4	People who are compatible with e-Government will have more intention to implement it.	**Compatibility**
Hp5	People with previous positive experience with e-Government will have more intention to implement it.	**Previous Experience**
HP 6	People with more awareness of e-Government will have higher intention to use it.	**Awareness**
Hp7	Respondents to the questionnaire will be highly experienced Internet users having high access levels.	**Capability**

5.6 Summary

The chapter revealed that e-Government when initially developed in the USA and other developed countries promised to respond to several segments of society's demand on online service. However, governments across the globe generally assume that most of the population demands high level of e-Government services resulting in most governments concentrating on delivering advanced levels of e-Government services. In reality most people are not willing to adopt advanced e-Government services. This Top-down enforcement procedure for implementing e-Government will be more evident in the developing countries. Citizens in order to adopt e-Government services have needs that governments must satisfy. There have been some attempts in research to identify people's needs to adopt e-Government, these attempts have been based on behavioural science theories which studies people's intention to adopt new working methods, technology, EC and more recently e-Government. In the case of Jordan variables affecting citizens' demand on e-Government services were assumed to be "trust in the Internet, trust in government, capability, compatibility, awareness and previous experience". The following chapter will construct a tool that will measure the Jordanian society demand for e-Government and whether hypothesised variables affect people's demand for e-Government.

Chapter 6

Data Collection and Analysis (Testing Citizen Adoption Model)

6.1 Introduction

The first goal of this chapter is to construct a data collection tool (online questionnaire) in order to examine the Jordanian e-Society demand on e-Government. The tool will also be used to collect data to test the hypothesised citizen needs presented in the constructed e-Government adoption model in the previous chapter. Following that the process of data collection from citizens will be described. The final section of this chapter will present and analyse collected data, presentation of the results will display characteristics of people who took part in the questionnaire, in addition to presenting the results of the tested variables. Software Microsoft Excel 2003, SPSS V14.0, in addition to an analytical tool provided by the website which hosted the online questionnaire (Questionnairepro.com) has been used to calculate and present the results of the online questionnaire. Software SPSS V14.0 also has been used to carry out simple and advanced analysis to test the proposed hypothesis. Statistical tests included normal correlations, mean comparison tests, t-Tests, factor analysis, reliability analysis and multiple regression analysis.

6.2 Choosing the Population (e-Citizens)

One of the core goals of the research is to try to recognize specific needs of people in order for them to use e-Government in Jordan and investigate the Jordanian Government recognition of these needs. In the previous chapters important needs have been selected and hypothesised as being the most important variables effecting people's demand on e-Government. The population selected to test the hypothesis on

has been the e-Society. e-Society is defined as a group of people who are using the Internet on a regular basis for different informative, social, commercial or other activities (McConnell International, 2001; Andersson & Gronlund, 2003), a person who belongs to the e-Society is an e-Citizen.

6.2.1 Sample

The reason why e-Citizens have been chosen to be surveyed is that previous research on the cause of usage or non-usage of e-Government has been analyzed primarily in terms of access and availability (Stowers, 2002; West, 2002b). When individuals or groups of people do not use e-Government, researchers and policymakers often assume that there is insufficient access to e-Government due to a lack of connectivity or lack of financial means to purchase necessary technology. The emphasis on access has caused discussions of the lack of e-Government usage to focus primarily on the "digital divide" rather than social or behavioral reasons (people's needs) that might drive people to choose not to access and use e-Government information (Jaeger, & Thompson, 2004). Hofstetter (1998) argues that universal physical access should not be provided unless the underlying social issues are also addressed. A recent observation by a representative of the e-Envoy office indicates that the usage of e-Government has not grown in the past two years and in some cases has fallen in the UK (The Economist, 2003). Therefore this research does not investigate people who are electronically incapable of accessing services, so that the research will not be limited by being focused on the access domain. Furthermore, access has been recognised as a barrier in Jordan and is highlighted in many international and Jordanian Government publications.

Additionally, people not connected online and who do not have any Internet experience in most cases will not have the knowledge to understand what is meant by using the Internet to access services. Also if they do understand it, they will not be aware of related implications such as the process of providing personal information or paying online. The following points clarify the reasons for choosing the e-Citizens as a sample:

- People who are not Internet experienced will lack the skill to judge e-Government services (Welch et al., 2005).

- People who are not using the Internet will demand the basic needs such as computers, an Internet connection, training to use the Internet.
- By understanding e-Citizens' needs, when government intends to empower newcomers, empowerment will be more effective (Reddick, 2005).
- By studying e-Citizens the digital divide can be explored in Jordan and whether there is reason to be optimistic or pessimistic[12] can also be examined.
- Previous studies measuring the intention to make use of e-Government services have been conducted on Internet users (Carter & Belanger, 2004; Carter & Belanger, 2005; Schaupp & Carter, 2005).

6.2.2 Sampling Frame and Sample Size

The sampling frame is a list of all elements of the study population from which the researcher will draw his sample (Sunders et al., 2003). In order to test the e-Government adoption model the respondent to the online questionnaire has been chosen to be from Jordanians or living in Jordan, older than 18 years old in addition to being an Internet user. Deciding the sample size in a study is almost always a matter of judgement rather than calculation (Sunders et al., 2003). Although there is no agreement in the literature as to the appropriate sample size researchers should use in their studies, many researchers recommend a minimum number of 30 for statistical analysis to provide useful and meaningful results. However, when conducting simple and advanced statistical analysis (Bivariate, Multivariate), in order to quantify results the sample must satisfy a certain size requirement to achieve acceptable levels of confidence interval and confidence level. According to Jordan's Department of Statistics (DOS, 2005) the percentage of Internet users within the Jordanian population is 8.10%. Jordan has a population of approximately 6 million, which means that Internet users in Jordan are approximately half a million. Each Internet user is considered to be an e-Citizen and part of the e-Society. In order to achieve a confidence interval or what is called margin of error of 5% and a confidence level of 97% in a population of 500,000 a sample of at least 471

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[12] Optimistic view on digital divide argues that people who are not accessing ICT are missing a lot. The pessimistic digital divide argues that even if causes for people not being able to access ICT are lifted people will still not use ICT (Skok & Ryder, 2004).

participants needs to take part in the online questionnaire (Wunsch, 1986; Bartlett, el al., 2001).

6.3 Choosing the Data Collection Method

In order to test a hypothesis data must be collected from a population representing the e-Society in Jordan. A quantitative questionnaire survey method has been chosen as the data collection method for this purpose. Greenfield (2002) defines the survey as "a procedure in which information is collected systematically about a set of cases (such as people, organisations and objects). The cases (or sample units) are selected from a defined population and the aim is to construct a data set from which estimates can be made and conclusions reached about this population". In a survey, the researcher seeks verbal or written responses to questions or statements. Surveys can be very effective in gathering data about individual preferences, expectations, past events and private behaviours. The versatility of this method is its greatest strength. It is the only practical way to gather many types of information and the most economical way in many other situations (Emory, 1980).

6.3.1 Choosing the Questionnaire Surveys Method

Oppenheim (1992) and Robson (1993) reported that there are many methods of data collection but those methods using questionnaire surveys can be divided into three methods. These are:

- Interviews
- Standardised quantitative self-completion (Postal, Online, Delivery)
- Group - administered questionnaires

Standardised quantitative is the type of survey used in this research. A standardised questionnaire is one of the most widely used survey data collection techniques. Because each person (respondent) is asked to respond to the same set of questions, it provides an efficient way of collecting responses from a large sample prior to quantitative analysis (Dillman, 2000). However, there are many forms of standard quantitative questionnaires. These include postal, self administered, delivery and

collection and more recently online questionnaires. Table 6.1 shows a comparison between different types of survey methods.

Table 6.1: Comparison between different questionnaire surveys methods. Sunders et al. (2003) p284

Attribute	*On line*	*Postal*	*Delivery and collection*	*Telephone*	*Structured interview*
Population's characteristics for which suitable	Computer-literate individuals who can be contacted by email or Internet	Literate individuals who can be contacted by post; selected by name, household, organisation etc.		Individuals who can be telephoned; selected by name, household, organisation etc.	Any; selected by name, household, organisation, in the street etc.
Confidence that right person has responded	High if using email	Low	Low but can be checked at collection	High	
Likelihood of contamination or distortion of respondent's answer	Low	May be contaminated by consultation with others		Occasionally distorted or invented by interviewer	Occasionally contaminated by consultation or distorted/invented by interviewer
Size of sample	Large, can be geographically dispersed		Dependent on number of field workers	Dependent on number of interviewers	
Likely response rate[a]	Variable, 30% reasonable within organisations, Internet 10% or lower	Variable, 30% reasonable	Moderately high, 30–50% reasonable	High, 50–70% reasonable	
Feasible length of questionnaire	Conflicting advice; however, fewer 'screens' probably better	6–8 A4 pages		Up to half an hour	Variable depending on location
Suitable types of question	Closed questions but not too complex, complicated sequencing fine if uses IT, must be of interest to respondent	Closed questions but not too complex, simple sequencing only, must be of interest to respondent		Open and closed questions, but only simple questions, complicated sequencing fine	Open and closed questions, including complicated questions, complicated sequencing fine
Time taken to complete collection	2–6 weeks from distribution (dependent on number of follow-ups)	4–8 weeks from posting (dependent on number of follow-ups)	Dependent on sample size, number of field workers etc.	Dependent on sample size, number of interviewers etc. but slower than self-administered for same sample size	
Main financial resource implications	World Wide Web page design	Outward and return postage, photocopying, clerical support, data entry	Field workers, travel, photocopying, clerical support, data entry	Interviewers, telephone calls, clerical support. Photocopying and data entry if not using CATI[c]. Programming, software and computers if using CATI	Interviewers, travel, clerical support. Photocopying and data entry if not using CAPI[d]. Programming, software and computers if using CAPI
Role of the interviewer/ field worker	None		Delivery and collection of questionnaires, enhancing respondent participation	Enhancing respondent participation, guiding the respondent through the questionnaire, answering respondents' questions	
Data input[b]	May be automated	Closed questions can be designed so that responses may be entered using optical mark readers after questionnaire has been returned		Response to all questions entered at time of collection using CATI[c]	Response to all questions can be entered at time of collection using CAPI[d]

6.3.2 Advantages of Using an Online Questionnaire

Since the e-Citizens are the target of the questionnaire survey, an online questionnaire has been considered to be the most appropriate tool for the purpose of this research. The online questionnaire had the following strength:

- In order to answer the questionnaire online each respondent will have an e-Mail account, in addition to having Internet skills. This will guarantee that he is a representative of the e-Society.
- The responses to the online questionnaire will reflect how the e-Society in Jordan will deal with e-Government services. Because online questionnaire is a set of online instructions that are to some extent similar to interacting with online services.

- e-Mail offers greater control because most users read and respond to their own mail (Witmer et al., 1999).
- An online questionnaire offers the researcher the ability to target many participants in Jordan, without having to travel to Jordan.

6.4 Questionnaire Design (Instrument Development)

Greenfield (2002) says that the quantitative survey has four basic consecutive operations. These are:

- Draw a sample of units from some population.
- Develop and test standardised ways to measure these units.
- Apply them to the sample units.
- Make inferences about the population from which the sample was drawn.

Subsequent to choosing from the population in Jordan the e-Society to be surveyed and subsequent to choosing the online questionnaire as the data collection method, the next step was to develop the online questionnaire and test it before applying it to collect data. Figure 6.1 displays the procedure of developing the online questionnaire required for this research.

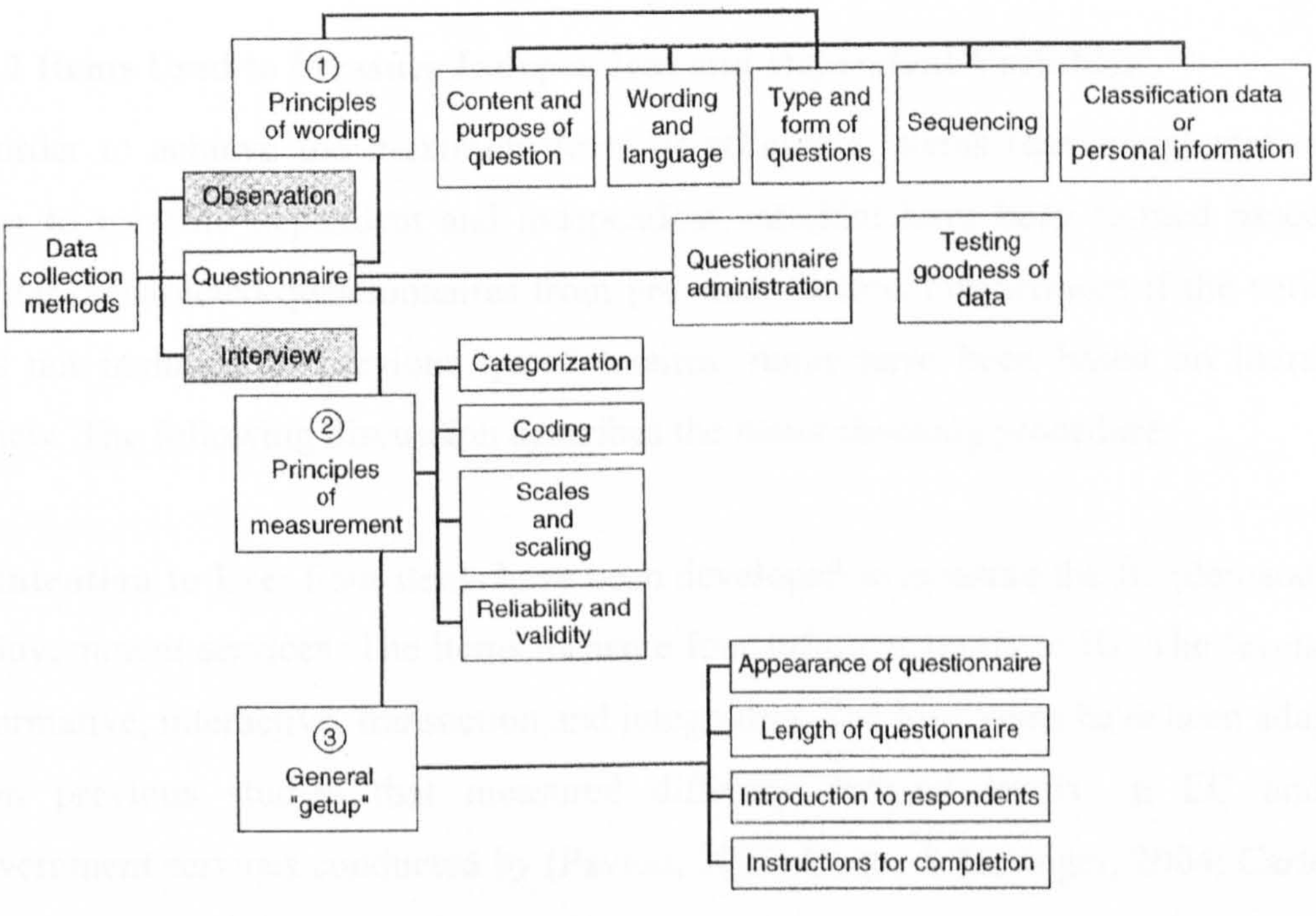

Figure 6.1: Principles of questionnaire design. Sekaran (2002) p 238

6.4.1 Question Types

Since the questionnaire goal was to test the hypothesis and measure specific items, scale closed questions are the type of questions used in the questionnaire. Dillman

(2000) explains that close-ended questions with ordered responses are useful when one has a well-defined concept, such as belief, for which an evaluative response is wanted, unencumbered by thoughts of alternative or competing ideas. Closed questions provide a quick way to separate high and low priority topics. Oppenheim (1992) explains that closed questions are important for asking the participants many questions which could be easily quantified and fed back immediately to test the hypothesis. Oppenheim (1992) emphasises the many advantages of closed questions which are:

1- Requires little time.
2- No extended writing.
3- Easy to process.
4- Makes group comparison easier.
5- Useful for testing hypothesis.
6- Less interviewer training.

6.4.2 Items Used to Measure Independent and Dependent Variables

In order to achieve the maximum level of efficiency, items (questions) created in order to measure dependent and independent variables have been formed based on similar constructed questionnaires from previous studies. Furthermore if the variable was not included in previous questionnaires, items have been based on literature review. The following discussion describes the items choosing procedure.

1- Intention to Use: Four items have been developed to measure the IU (demand) on e-Government services. The items measure four different levels of IU. The levels are informative, interactive, transaction and integrative. The four items have been adapted from previous studies that measured different demand levels on EC and e-Government services conducted by (Pavlou, 2003; Carter & Belanger, 2004; Carter & Belanger, 2005; Schaupp & Carter, 2005).

Slight changes have been implemented to items from previous studies. People's intention to pay VAT and TAX service have been adopted in previous studies when measuring people's IU for different levels of government services. In the case of this research since e-Government in Jordan has not reached advanced stages, people have been asked if they would use Government websites to pay Tax or renew an official

document. Official document renewal instead of VAT has been adopted in this research because TAX and VAT payment are not widespread services within all segments of the Jordanian society, unlike renewing an official document which is the most common service of all government agencies. Previous research completed by Larson & Rainie (2002) demonstrates that the highest level of transaction based services adopted by e-Citizens in the USA has been paying tax online followed by the renewal of drivers' licences and or auto registration. This also demonstrates that document renewal as well as TAX payment is one of the most appealing online services to people.

2- Trust in government & Trust in the Internet: 4 items to measure trust in government variable have been based on previous similar studies completed by (Van Slyke et al., 2004; Pavlou, 2003; Carter & Belanger, 2005; Schaupp & Carter, 2005). However, asking people about their opinion on governmental institutions could create respondent apprehension especially in the developing world. To avoid such reaction in order to obtain citizens' true feelings about governmental institutions the phrase public sector was used as a synonym for the government institutions when asking the questions. 3 Items measuring Trust in the Internet variable have been based on previous similar studies completed by (McKnight et al., 2002; Carter & Belanger, 2005; Schaupp & Carter, 2005).

3- Previous experience: 4 items have been used to measure this variable. Items have been generated based on items that measured PU and PEOU (Davis, 1989; Gefen & Straub, 2000; Pavlou, 2003; Schaupp & Carter, 2005; Carter & Belanger, 2005). Since the Jordanian e-Government is still in the informative stages, questions have been designed to assess people's experience with the data provided online by government websites. Reliability, ease of use, usefulness and regular updating of government information on websites have been the four measured items in order to determine participants' previous experience with government websites.

A Research completed in the USA by Thomas & Streib (2003) when asking 827 Internet users residents in Georgia State if they had ever visited a government website, revealed that 62.2% of them had not visited any government website in the previous 12 months. It is therefore expected that some of the respondents will have never used the Jordanian e-Government. For that reason prior to measuring

respondents' previous experience, they have been asked if they had ever visited a government website and if their answer was yes they would be allowed to use this to answer the items designed to measure their previous experience. Nevertheless, if respondents have not visited any government website they will be directly routed through the online questionnaire to answer question related to the next variable.

4-Capability: User's capability is an important variable that determines a person's ability to conduct e-Service. In this research capability as a need will not be measured, since the e-Society is already capable of accessing and using the Internet and responding to this questionnaire. Instead factors making people physically capable of being Internet consumers will be measured, this includes their opinion on Internet prices in Jordan as well as their credit card ownership. Other items that will measure respondent Internet usage and access level, years of Internet experience and education levels, will be an indicator of the skill capability and education level that users must have in order to use e-Government services.

5- Awareness and Compatibility: 3 items have been used to measure the awareness variable, items asked people if they had heard of e-Government as a concept and about the Jordanian e-Government initiative and if they knew that the government website offered information online. Three items to measure compatibility with e-Government services have been based on items used in similar studies conducted by (Carter & Belanger, 2004; Schaupp & Carter, 2005; Van Slyke et al. 2004; Carter & Belanger, 2005).

6.4.3 Scale of Questionnaire

Similar to e-Government research by Chen & Dimitrova (2006) who investigated variables affecting citizens' demand on e-Government services in the USA by constructing a questionnaire that had a scale of 1-5 for all items that tested their variables. Items used in the questionnaire for this research to measure the variables of IU, awareness, compatibility were rated on a scale of 1-5 (Yes, Possibly yes, Not Sure, Possibly no, No). Trust in state government, trusts in the Internet were also rated on a scale of 1-5 (Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree). Questionnaire is showed in Appendix 2 at the end of this research.

6.4.4 Validity of Questionnaire

Validity refers to the extent to which an empirical measure adequately reflects the real meaning of the concept under consideration (Sekaran, 2002). Validity includes content validity, face validity and construct validity. Content validity refers to the degree to which the items measure the content they are intended to measure. Face validity means the items appear to measure what they purport to measure. Construct validity testifies to how well the results obtained from the use of the measure fit the theories around which the test was designed. To insure highest levels of validity for the developed instrument (online questionnaire) the following steps have been executed:

1. Careful design of individual questions by:
    - Literature review to understand the variables which are important to be included in the survey.
    - Review of similar or partly similar surveys by researchers for the same purpose of the research.
2. A clear layout of the questionnaire by insuring questions are numbered, clear to the participant, have a logical sequence and are simple in language.
3. An explanation is made at the start of the questionnaire to make people aware of the purpose of the questionnaire.
4. A pilot survey was conducted on 30 participants in order to gain their feedback on the questionnaire and so improve the content validity of the questionnaire.
5. Run statistical tests (Factor Analysis) on the online questionnaire items to insure its internal construct validity[13].

6.4.5 Reliability of Questionnaire

Reliability is defined as a measure applied repeatedly to the same subject yielding the same result (O'Sullivan & Rassel, 1995). Mitchell (1996) outlines three common approaches to maximise reliability when designing a questionnaire, test and re-test, internal consistency and alternative form. Other scholars indicate that the test of the reliability of the developed instrument can be achieved by:

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[13] Reliability Analysis are detailed in Section 6.8 in this chapter page 154

- Comparing the data collected with other data from a variety of sources.
- Running a statistical test which is one way of testing the method (crunch alpha).

In the case of this research the designed online questionnaire took all possible measures to ensure the highest reliability levels by:

- Running a pilot questionnaire and executing adjustments based on feedback.
- Questions have been mostly obtained from previous studies.
- Running statistical analysis (crunch alpha) to ensure the reliability of the developed questionnaire[14].

6.4.6 Questionnaire Layout

According to Greenfield (2002) any data collection instrument in the form of a package designed for self-completion needs to satisfy several requirements. In accordance with Greenfield's advice the following measures have been undertaken:

- Since participants were contacted by an e-Mail containing a link leading to the domain of the online questionnaire, there was a message in the e-Mail which is similar in concept to the cover letter attached to a normal questionnaire survey. The message was added to make clear to each respondent exactly what he is expected to do and why.
- Questions and instructions have been used in a clear and unambiguous simple language.
- Data processing has been made easy, by constructing matrixes questions to measure a particular variable whenever it was possible.
- The aim of the questions was to attract, not frighten off the prospective respondent.
- The designed online questionnaire had an attractive layout.
- Related questions were placed together, establishing a clear and logical order.

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[14] Factor Analysis are detailed in Section 6.7 in this chapter page 154

6.4.7 Publishing the Questionnaire Online

The process of publishing the questionnaire online and creating a domain for it on the World Wide Web has been achieved after several steps. Firstly the researcher looked in the Internet for an online business that provides the service of publishing online questionnaire. Subsequently the researcher registered for a trial period with different businesses providing online questionnaire services. During the trial period features of questionnaire design, distribution, response, storage, lay out have been examined within different service providers. Finally after testing different service providers it was decided to create a six month corporate account (most advances account) between May 2006 and November 2006 with www.questionpro.com in return for a financial sum. www.questionpro.com provided a variety of features. These included:

- Providing a domain for an online questionnaire on the World Wide Web.
- Enabling the researcher to design different types of questions and answers including normal and matrix questions.
- Responses to the questionnaires online are instantly e-Mailed to the researcher's e-mail in addition to being stored in a database provided by the service provider.
- Enabling research to conduct online different types of analysis on the questionnaire results.

6.4.8 Running a Pilot Questionnaire

Sunders et al. (2003) advise, "however pressed for time you are, do your best to give the questionnaire a trial run, as, without a trial run, you have no way of knowing your questionnaire will succeed". In addition, as mentioned previously, a pilot questionnaire will help to improve the data collection instrument validity and reliability, therefore the second step was creating a pilot questionnaire and applying it on 30 participants who were asked to answer the questionnaire and give their feedback. The pilot questioner examined respondent interaction with the questionnaire. This included their understanding of questions, time required to complete the questionnaire, also it highlighted different concerns regarding several questions related to the questionnaire which have been resolved, leading to the creation of the final version of the questionnaire which will be applied to the sample representing the e-Society Jordan.

6.4.9 Distributing the Questionnaire

A distribution strategy was created in order to achieve a representative random sample of the e-Society in Jordan. The Jordanian culture is based on strong family and social relationships in addition to the tribal nature of Jordanian society. This however, provided an excellent opportunity to implement a simple straightforward approach to targeting people and asking them to forward the questionnaire online to people they know. The researcher has more than 150 people from Jordan on his e-Mail address book. These 150 are a variety of family, friends, university colleagues, previous work colleague and others. People in the e-Mail address list are from different age groups, occupations, education levels and gender groups. The number of people on the list and their diversity provided a fertile opportunity to target people because they represent a random distribution and are representative of the Jordanian e-Society. The 150 e-Mail addresses have been contacted and have been asked, after the introduction, to click on a link provided in the e-Mail which will surf them to the online questionnaire. Contacted people have been also asked to forward the e-Mail they received which contains the link to the questionnaire along with the cover letter to friends and families and people on their e-Mail address book asking them if they could answer and also forward the survey to people they know.

6.5 Data Preparation

In most research the data analysis entails three major steps, done in generally this order (ICPSR, 2005):

- Cleaning and organizing the data for analysis (Data Preparation).
- Describing the data (Descriptive Statistics)
- Testing Hypotheses and Models.

Data Preparation involves checking the data for accuracy, entering the data into the computer, transforming the data and developing in addition to documenting a database structure that integrates the various measures. There is a wide diversity of ways to enter the data into the computer for analysis. Probably the easiest is to just type the data in directly. In the case of this research after defining the variables on SPPS 14.0, data results of the online survey have been entered. So far as the missing values were concerned, much software automatically treats blank values as missing. There was no need to designate specific values to represent missing values since SPSS 14.0 provided features that would determine missing values and handle them throughout the calculations.

6.6 Data Analysis Results

In the following section of the research descriptive statistics will be used to display the participants in the survey demographics tested variables characteristics. Descriptive statistics are used to describe the basic features of the data in a study. They provide simple summaries about the sample and the measures. Together with simple graphics analysis, they form the basis of virtually every quantitative analysis of data.

6.6.1 Participation Statistics

The survey has been viewed by 1082 individuals, of them 770 have started the survey which makes participation rate for people who viewed the survey 71.2%, 660 of the participants completed it which makes the completion rate 85.71%. The sample achieved a confidence interval (margin of error) of 5% and a confidence level of 99%. Figure 6.2 presents the participation rates in the questioner.

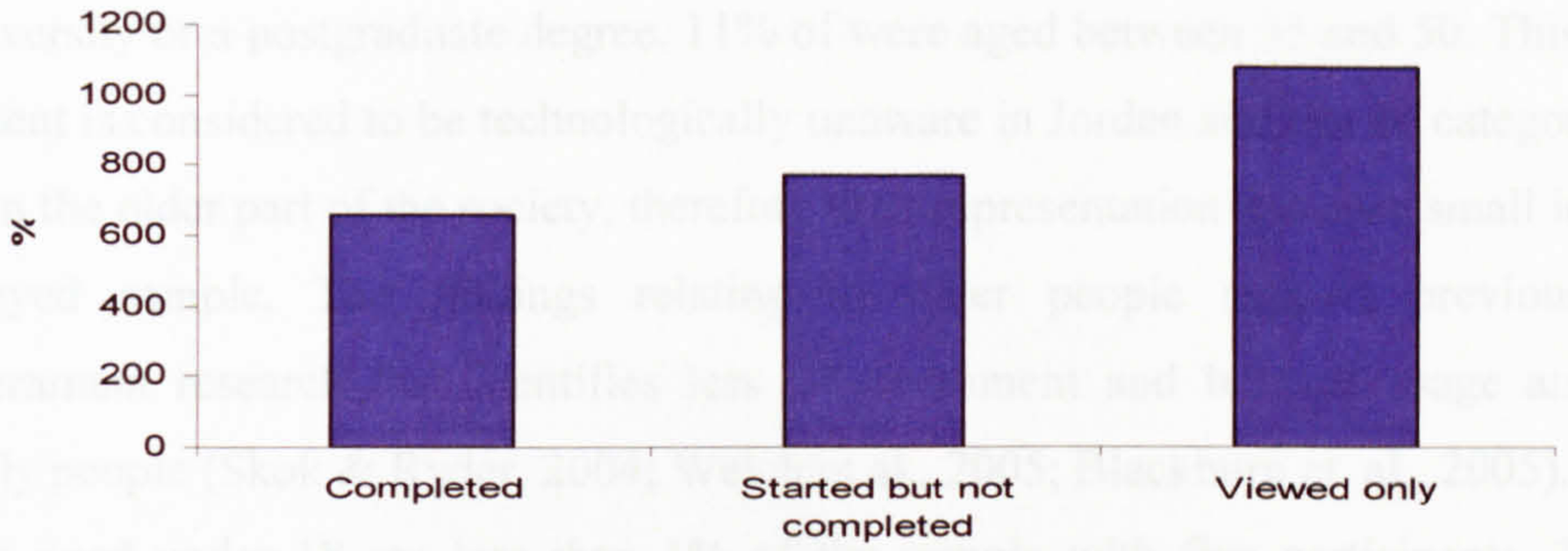


Figure 6.2: Online questionnaire participation rate

6.6.2 Demographics of Participants

Sample Age Distribution: The age distribution of the sample shown in figure 6.3 came as a reflection of the characteristics of the Jordanian e-Society, the most significant percentage of participants being those aged (18-24) and (25-34) years old, representing 85% of the sample. The age group (25-34) accounted for 52% of the sample; they are mostly professionals in the private and public sector, financially secure people, with high connectivity rates and with a high level of education. The age segment presenting the new generation aged from 18-24 accounted for 33% of the sample. They are mostly students who are expected to be more technologically aware having high ICT skills. This is compatible with the Jordanian e-Readiness report that identified the younger generations in Jordan as being potential consumers of e-Government.

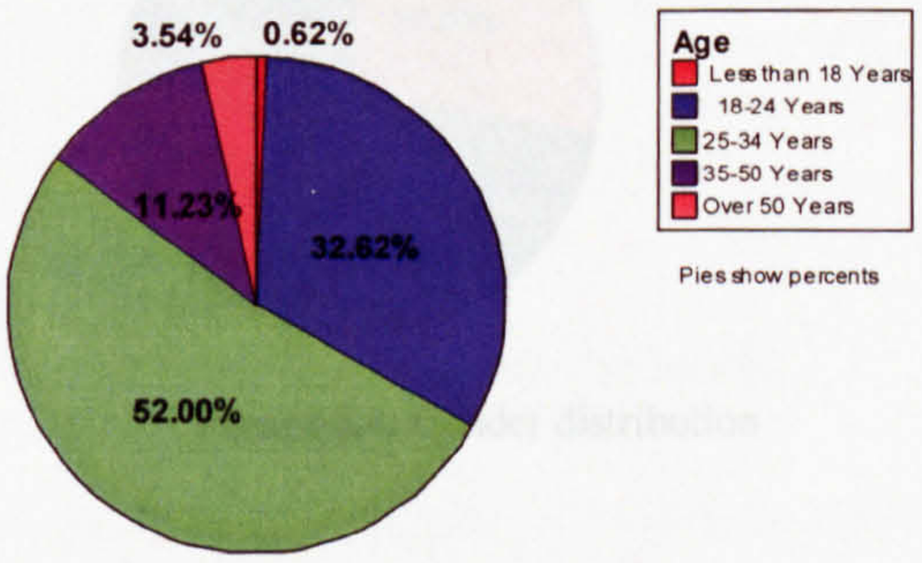


Figure 6.3: Age distribution

It had been expected that the participation of users over 50 years old would be very low. Findings confirmed expectations, only 20 participants in the survey are over 50 which accounts for ≈4% of the sample. Not surprisingly 18 of the people over 50 had

a university or a postgraduate degree. 11% of were aged between 35 and 50. This age segment is considered to be technologically unaware in Jordan and can be categorised within the older part of the society, therefore their representation has been small in the surveyed sample. The findings relating to older people support previous e-Government research that identifies less e-Government and Internet usage among elderly people (Skok & Ryder, 2004; Welch et al., 2005; Blackburn et. al., 2005). The group aged under 18 are less than 1% of the sample with five participants. Their results have been dropped from any calculations to increase the validity of the results.

Gender: The gender divide is one of the major problems facing female Internet users in Jordan. The UNPAN (2005) identified Jordan as a country having one of the lowest female percentages of total Internet users in the world, with only 6% of Internet users being females. Results of the survey shown in figure 6.4 indicated that 28% of the participants are females, which confirmed the existence of the gender divide problem. However, the impact of the problem seems to be less than as highlighted by the UN, this is because the sample is presenting the Jordanian e-Society not the whole Jordanian population. Generally members of the e-Society are people who mostly come from middle and upper class families (McConnell International, 2001) where gender divide impact amongst this segment of the population from the researchers experience is less than in the lower classes who have hard economic situations.

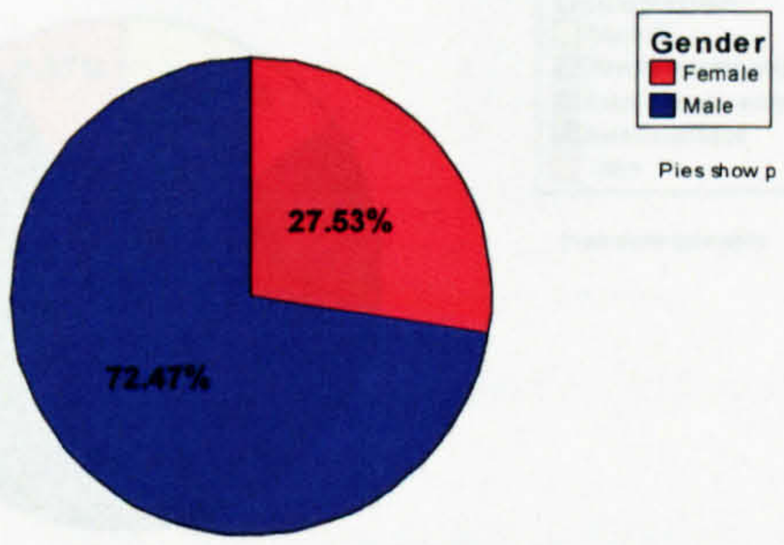


Figure 6.4: Gender distribution

Education: Participants' education results were as expected and supported previous e-Government research where people with higher education are expected to have higher Internet usage levels than people with less education. Results shown in figure 6.5 revealed that 52% of participants have a university education and 32% have a postgraduate education, which means 84% of participants have at least a university

education. 9% had other education, around 4% had college education and only 2% have had basic high school education.

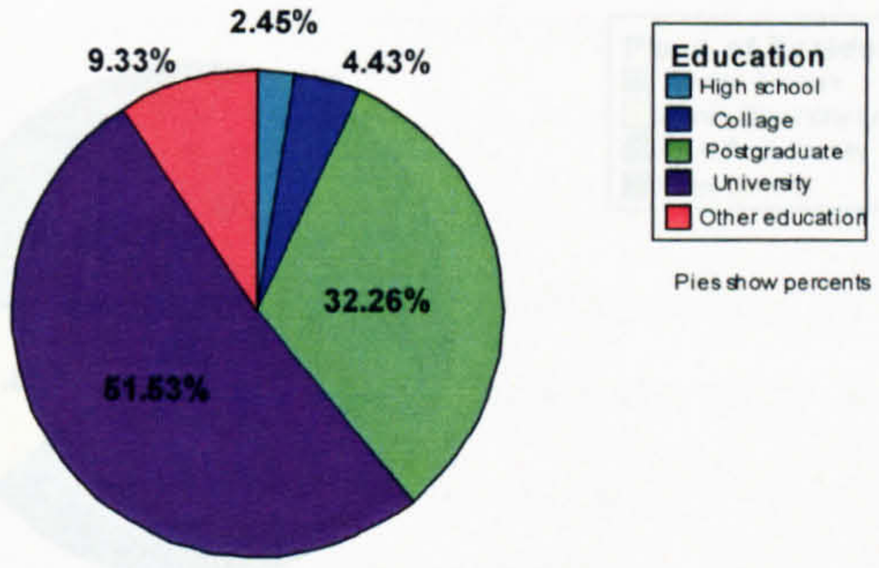


Figure 6.5: Participants education distribution

Occupation: 46% of participants are private sector employees, despite the Jordanian public sector being the largest employer in Jordan (Ciborra, 2005). Only 19% of participants are public sector employees. This is because the income rate within the Jordanian public sector is very low. The majority of people who have ICT skills, knowledge of the English language and better wages will be in Jordan's private sector since it pays much better than the Jordanian public sector (Al-Jaghoub & Westrup, 2003). 15% of participants are students, 11% are self employed and 9% have no occupation. Figure 6.6 presents participants occupation distribution.

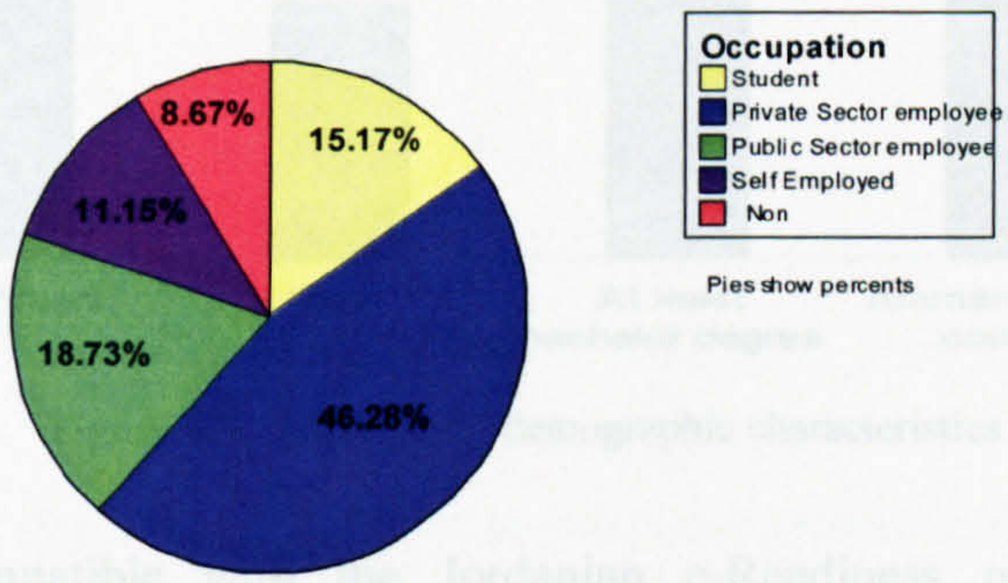


Figure 6.6: Participants occupation distribution

Place of Residence: as shown in figure 6.7 64% of the participants' place of residence is in Amman the capital of Jordan, 12% are living in other parts of Jordan and this was also compatible with the Jordanian e-Readiness report which indicated that most Internet users are concentrated in the capital Amman. 13% of participants are in other countries mainly in the Arabic Gulf countries these are young educated people with some expertise who seek better payment opportunities. 11% are based in

other countries these are mainly higher degree students or high skill migrants in Europe and the USA (Al-Jaghoub & Westrup, 2003).

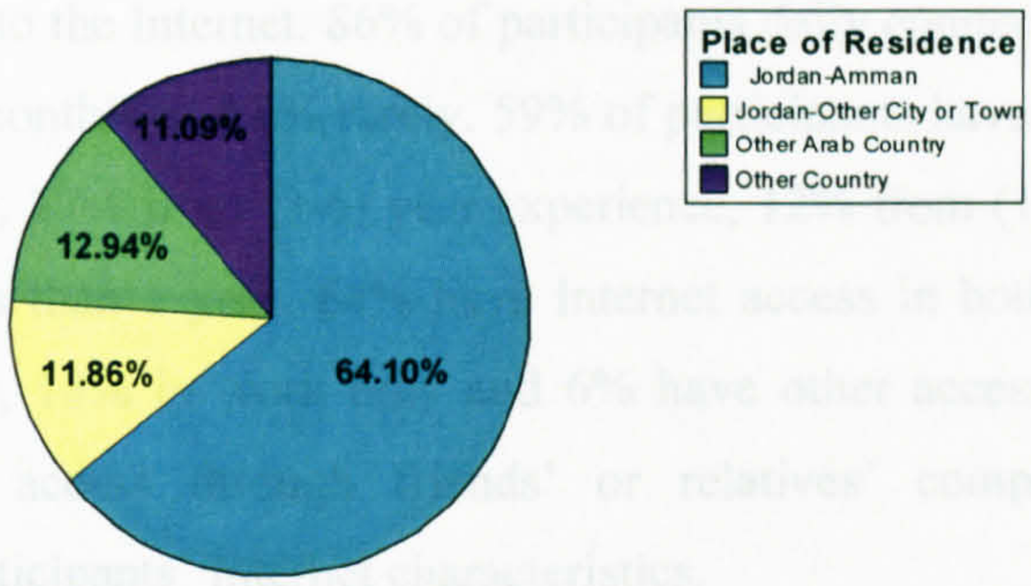


Figure 6.7: Participants place of residence distribution

6.6.3 Outline of Participants' Demographics

85% of participants are aged between 18-35 years old, 72% are males, 84% have at least university education and 88% are located in the capital Amman or in another country which is presented in figure 6.8. Such results were expected because the survey has been online and it targeted the Jordanian e-Society.

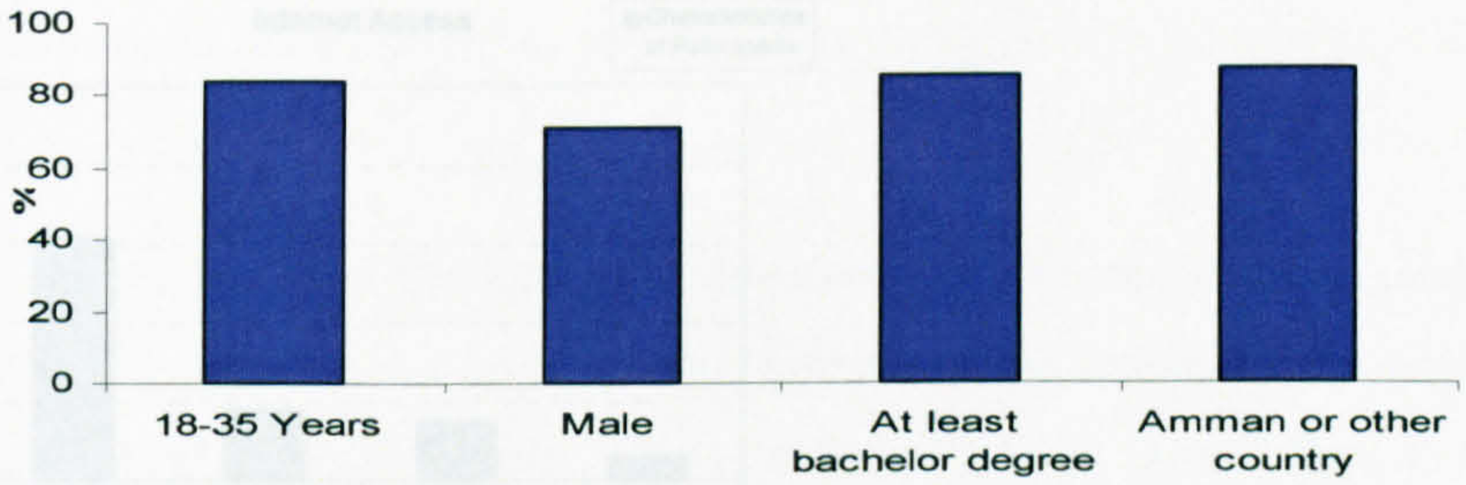
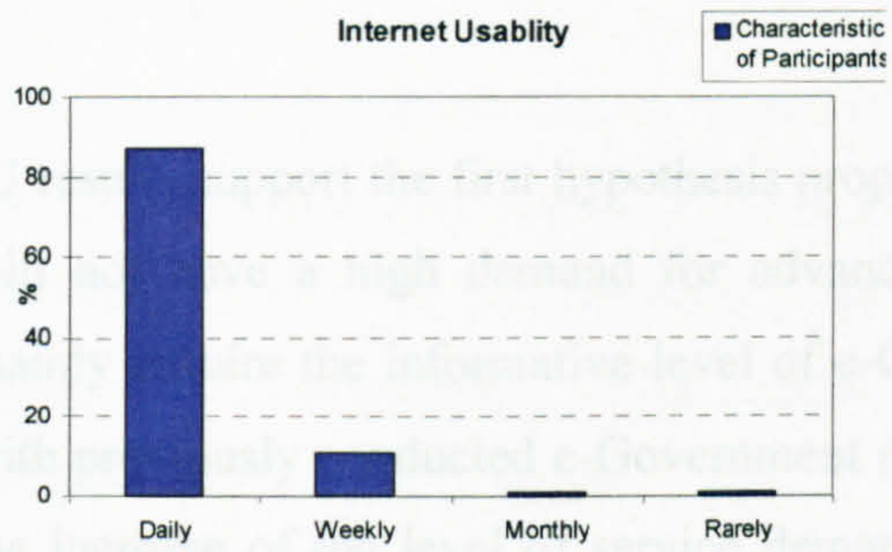


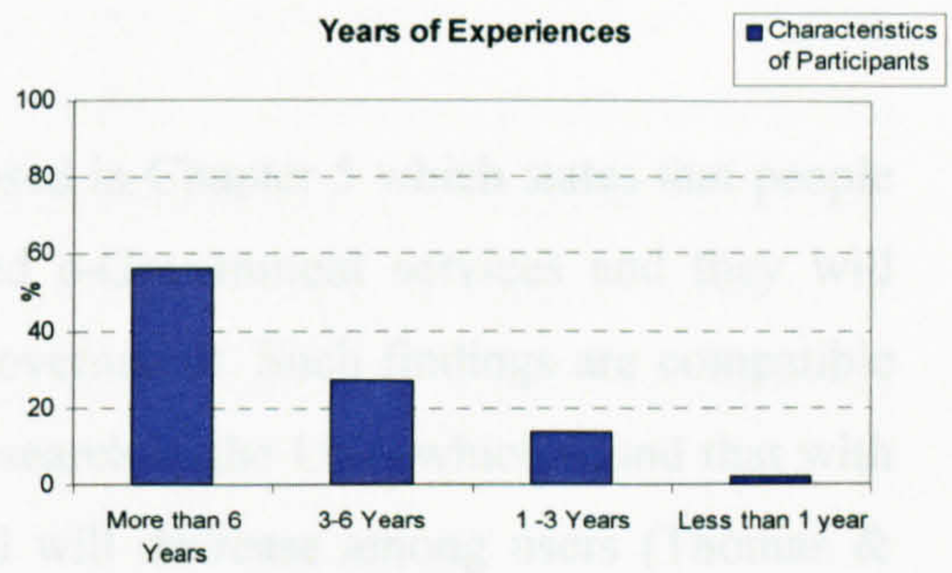
Figure 6.8: Participants' demographic characteristics

Findings are compatible with the Jordanian e-Readiness report and are also compatible with previous e-Government studies (Howard et al., 2001; Thomas & Streib, 2003; Edmiston, 2003; Skok & Ryder, 2004; Jaeger & Thompson, 2004; Blackburn et al., 2005; Welch et al., 2005; Reddick, 2005) who investigated the characteristics of Internet and e-Government users, indicated that age, education, income, location and gender are major elements in determining if a person is an Internet user. West (2004) said "e-Government users tended to be male, younger, better educated and earned higher incomes than the public as a whole".

6.6.4 Participants' Internet Characteristics Results

This section of the chapter will present results related to participants' Internet characteristics, this includes Internet usability level, years of Internet experience and the level of access to the Internet. 86% of participants daily connected to the Internet, 11% weekly, 2% monthly and 1% rarely. 59% of participants have more than 6 years Internet experience, 27% from (3-6) year experience, 12% from (1-3) years and only 2 percent have less than 1 year. 64% have Internet access in both home and work, 12% at home only, 18% in work only and 6% have other access, which might be Internet cafés or access through friends' or relatives' computers. Figure 6.9 summarises the participants' Internet characteristics.





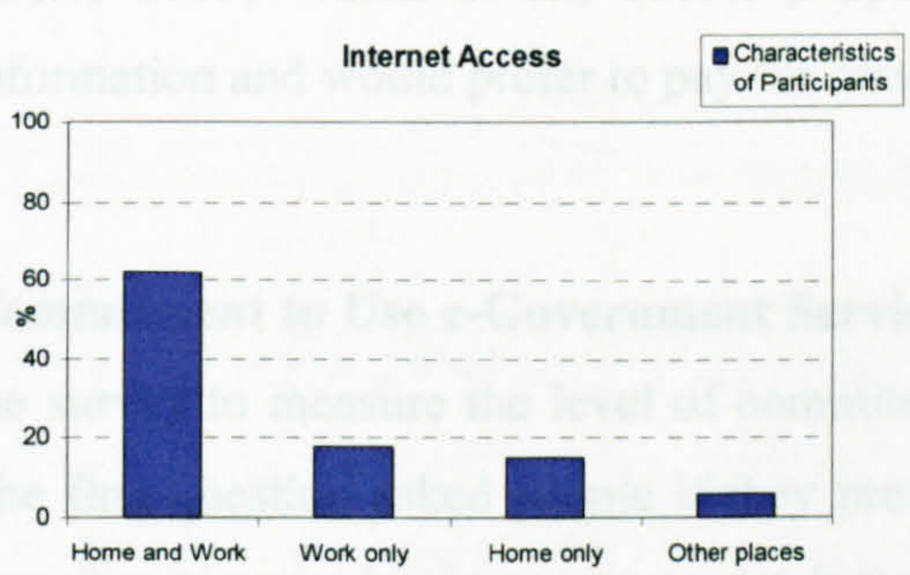


Figure 6.9: Participants' internet characteristics results

6.6.5 Variables Results

General IU (demand) on e-Government in Jordan: IU results shown in table 6.2 indicate that the majority of people would use government websites for informative online services. However, as the level of government services increased the intention of participants to use them decreased, with a majority of people not willing to access advanced services online. 66% of Internet users would use e-Government to gather

information however only 29% of participants willing to pay online for a government service.

Table 6.2: IU frequency results

Would you use Government website to	Yes, Possibly yes	Not sure	No, Possibly No
Gather information (Informative)	66 %	7%	27%
Send an e-mail for a query (Interactive)	48%	12%	40%
Submit personal information if needed (Transactional)	32%	13%	55%
Make online payments (Advanced Transactional)	29%	7 %	64%

IU results support the first hypothesis proposed in Chapter 5 which states that people will not have a high demand for advanced e-Government services and they will mainly require the informative level of e-Government. Such findings are compatible with previously conducted e-Government research in the USA which found that with the increase of the level of service demand will decrease among users (Thomas & Streib, 2003; Welch et al., 2005), people in general use the website to gather information and would prefer to pay for services by visiting government departments.

Commitment to Use e-Government Services: Two questions have been included in the survey to measure the level of commitment of e-Citizens to use online services. The first question asked people if they preferred (rather than if they would) to visit government agencies in person to get information rather than using online services, the second one asked if they preferred to visit a government agency to pay for services rather than using the Web. Findings revealed that 41% of the people who would use online services to gather information actually preferred visiting government agencies to gather information. This makes people who are willing to use the Internet to gather information and preferred this method to visiting a government agency online 39% of the total sample. However, for paying online 48% of people who would use government online facilities prefer face to face interaction with government, which makes the percentage of the people who would like to pay online

and prefer online payments rather than visiting government agencies 15% of the total sample. This confirms the first hypothesis which assumed that the e-Society will not demand high levels of online service. Table 6.3 summarises findings.

Table 6.3: Commitment to use e-Government services frequency results

	Would use government website	**Would use website & prefer it than visiting government agency**
Gather information	66%	39%
Pay info	29%	15%

Compatibility: Compatibly between online e-Government services and the Jordanian e-Society has been measured using three questions, each having a 5 scale scoring system similar to the one used in measuring the IU e-Government. Results reveal that the Jordanian e-Society in general has a substantial amount of compatibility with e-Government services. Compatibility with informative e-Government services is higher than compatibility with online payment methods. Table 6.4 presents compatibility frequency results.

Table 6.4: Compatibility frequency results

e-Government services would	**Yes, Possibly yes**	**Not sure**	**No, Possibly No**
Fit my way of gathering info	79%	4%	17%
Fit my life Style	76%	6%	18 %
Fit my way for Paying for government services	64%	8%	28%

Trust level in Public Sector: e-Society trust in the public sector has been measured using 4 questions which have a 5 scale scoring system varying from (Strongly Agree (1) – Strongly Disagree (5)). Results show that the Jordanian e-Society has a satisfactory level of public sector trust, the average mean of questions measuring trust was 2.78. With regard to frequency 34% of people had positive trust in Government,

20% were neutral and 46% had negative trust in government. Table 6.5 presents the trust level in public sector frequency results.

Table 6.5: Trust in the Public Sector frequency results

The public sector would	Agree	Not sure	Disagree
Be able to handle payments	37%	20%	43%
Be trusted to conduct the service	35%	19%	46%
Act in the customer's best interest	34%	20 %	46%
Be trusted with online payments	30%	19%	51%

Trust in the Internet: Similar to trust in the public sector trust in the Internet has been measured using 3 questions which have a 5 scale scoring system varying from strongly agree to strongly disagree. Results indicated that the majority, 52% of the e-Society in Jordan, has low trust in the Internet, 21% had neutral trust and 27% had high trust levels in the Internet. What is significant in this finding is that this response came from the e-Society where the majority of people belonging to it are skilled Internet. Table 6.6 presents trust in the Internet frequency results.

Table 6.6: Trust in the Internet frequency results

	Agree	Not sure	Disagree
Internet is safe	29%	21 %	50%
Online payments are safe	25%	18%	57%
Cyber laws protect me	25%	24%	51%

Previous Experience with e-Government: e-Society's previous experience with e-Government has been measured through questioning people who have previously visited an e-Government website. As shown in figure 6.10 results indicated that ≈ 74% of participants in the survey have previously visited a Jordanian Government website. People who have previously visited government website have been asked 4 questions relating to participants' perception of the usefulness, ease of use, reliability

and the regular update of governmental websites. The 4 questions had a 5 scale scoring system varying from strongly agree to strongly disagree.

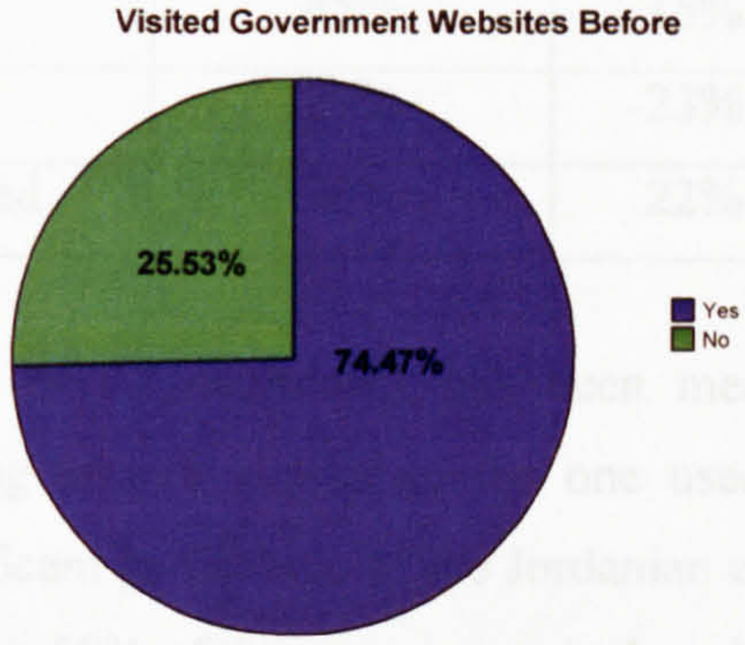


Figure 6.10: Participants who have visited e-Government before

Results indicated that 34% of people who had previously visited a government website had a positive experience, 19 a neutral and 45% a negative experience. Ease of use scored the best result with an average mean of 2.98. This result has been expected since the Jordanian e-Government is providing citizens with low level services (mainly informative). Therefore government websites are basic with no complications. However, 42% of the participants described information to be not easy to use, since this significant percentage comes from experienced Internet users it implies that among ordinary inexperienced Internet users a percentage of people finding government online information difficult to deal with will dramatically increase. 45% of the participants thought that government websites have been useful, only 29% thought that they are reliable and 20% thought that government regularly updated it websites.

Regularity of update is an important indictor of whether government agencies are commitment to delivering services through government websites. Since the Jordanian Government websites are still in the informative level of service delivery, this implies that the only method of providing added value service to citizens would be by presenting adequate and up to date information. Table 6.7 presents previous experience frequency results.

Table 6.7: Previous experience with e-Government frequency results

You found e-Government services	Agree	Not sure	Disagree
Easy To Use	42%	17%	41%
Useful	45%	15%	40%
Reliable	29%	23%	48%
Regularly Updated	20%	22%	58%

Awareness: Awareness of e-Government has been measured using 3 questions having a 5 scale scoring system similar to the one used to measure IU. Results demonstrate that a significant percentage of the Jordanian e-Society had awareness of e-Government, on average 60% of the participants had positive awareness, 9% neutral and 31% low awareness. However, awareness levels of most users came as a result of them being Internet experienced, not as a result of the Jordanian Government promotion of e-Government. Table 6.8 presents awareness frequency results.

Table 6.8: Awareness frequency results

	Yes, Possibly yes	Not sure	No, Possibly No
Knew that Gov. websites exist	71%	11 %	18%
Heard about e-Government	65%	6%	29%
Heard about Jordanian e-Government	43%	11%	46%

Capability: As previously mentioned capability variations could not be directly measured from the sample because the data collection method is an online questionnaire, meaning that all respondents to this questionnaire are Internet capable. The respondent Internet characteristics can give an idea of the Internet user's skill level to be able to interact with the online questionnaire which could be similar to conducting an e-Government service, also the respondent's perception of Internet prices can be an indicator of the user's needs in order to obtain physical access to the Internet, finally their ownership of a credit or debit card can reflect their capability to pay online.

Access capability: 50% of Internet users in Jordan thought that Internet prices are expensive, 36% thought Internet prices are very expensive, 13% saw them as neutral and only 1% thought prices to be cheap and only 2 cases thought Internet prices to be very cheap, figure 6.11 presents participants perceptions on internet prices in Jordan. What is significant in this result is that presenting participant mostly coming from the middle and upper classes and have a good income, are educated and use the Internet on a daily basis. Therefore they have experienced Internet benefits and it is part of their life style and needs. However, more than 86% of them believe that Internet prices in Jordan are expensive.

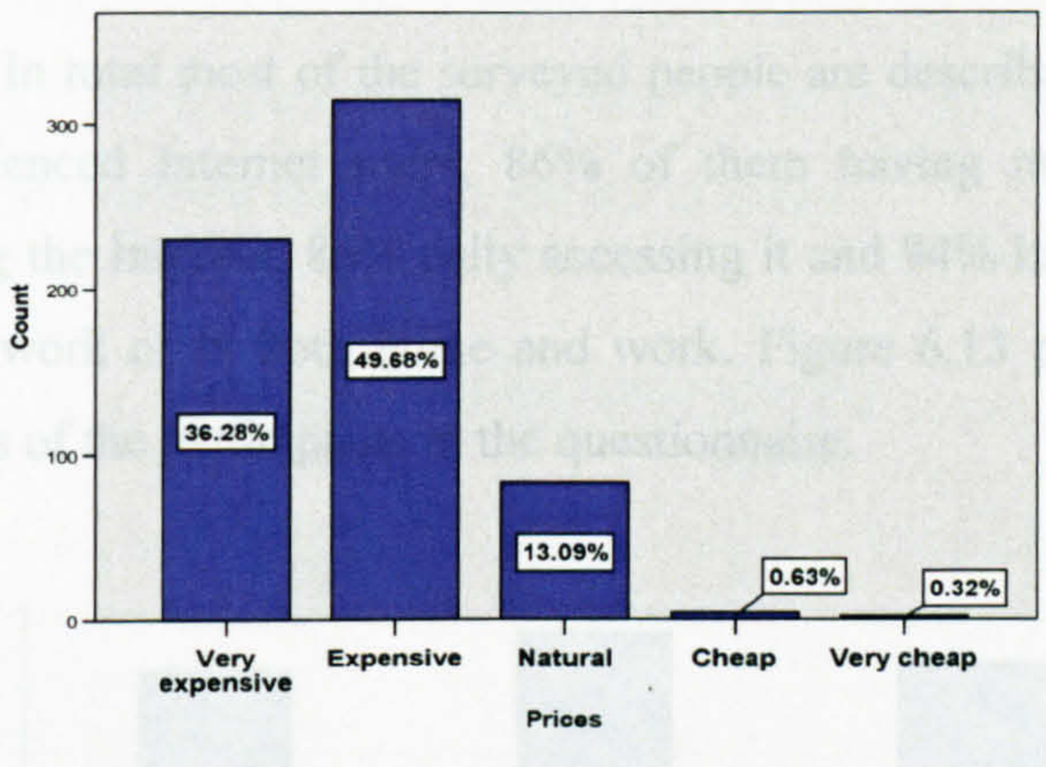


Figure 6.11: Participants' perspectives on Internet prices in Jordan

This percentage is expected to increase among the ordinary Jordanian population who have low incomes, also who does not achieve any added value achieved by connecting to the Internet.

Payment capability: the majority of the e-Society in Jordan is described to be technologically friendly, most being financially secure and educated. However, ownership of credit or debit cards is low among this pioneering sample of the Jordanian society. As shown in figure 6.12 only 25% of participants in the questionnaire owned a credit or debit card. Credit card ownership is expected to be much lower among ordinary Jordanian people. Previous research in Jordan indicated that credit card ownership is around 5% in Jordan (Momani, 2005). This implies that even if Internet users are willing to perform online commercial activities, most of them will not be able to conduct this activity since they lack the payment tool.

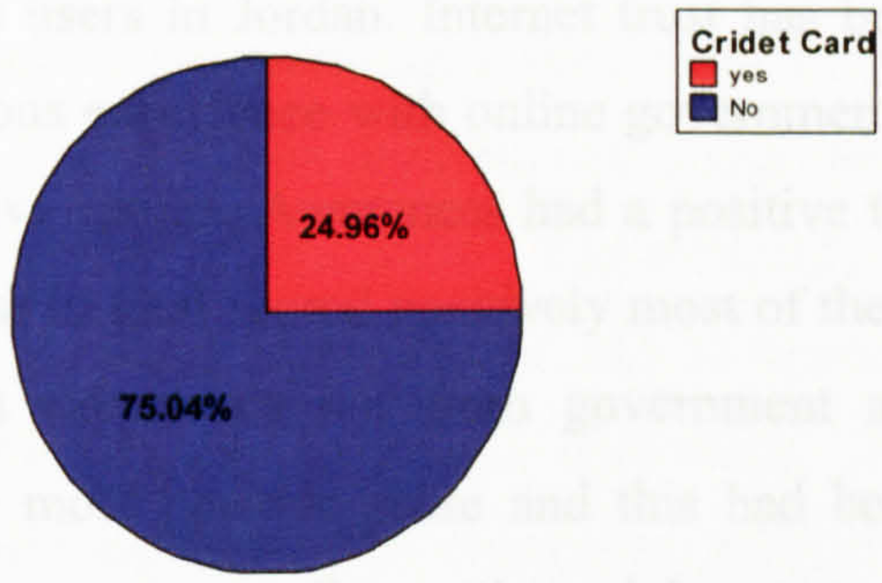


Figure 6.12: Participants' ownership of credit or debit cards

Skill Capability : In total most of the surveyed people are described as being highly skilled and experienced Internet users, 86% of them having more than 3 years experience in using the Internet, 86% daily accessing it and 94% having connectivity either at home or work or in both home and work. Figure 6.13 presents the major internet capabilities of the participants in the questionnaire.

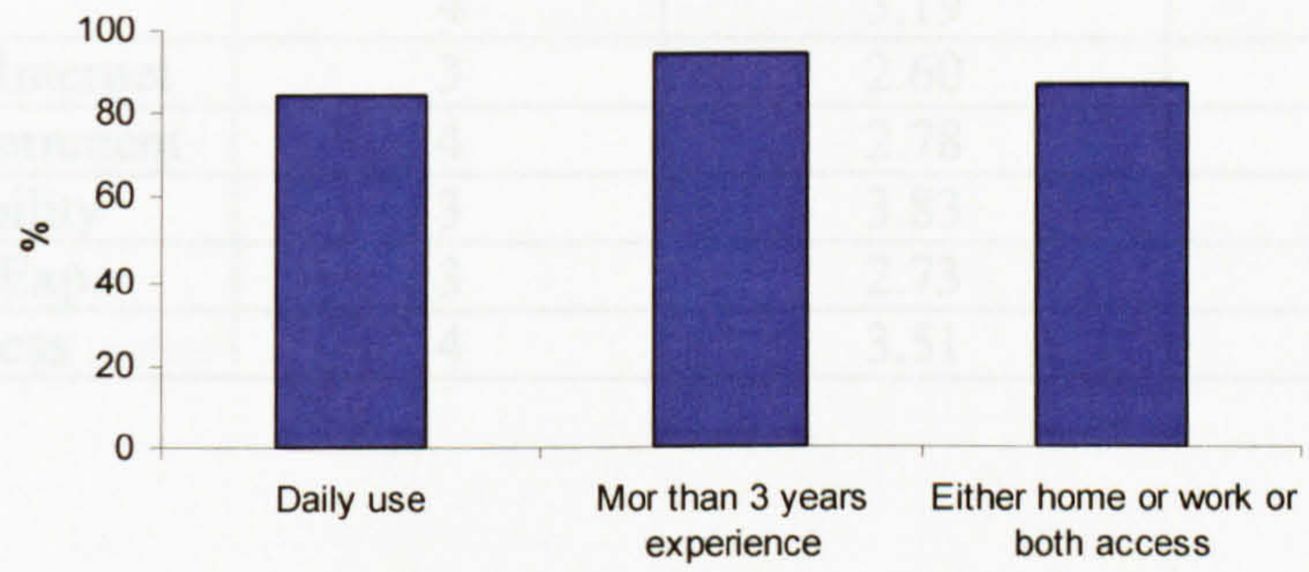


Figure 6.13: Participants' Internet skills

6.6.6 Outline of Variables Results

Dependent variable "IU e-Government" results reveal that the Jordanian e-Society generally has a moderate demand level for e-Government services. The demand is high for informative e-Government. However, demand decreases as the level of online service increases. Furthermore, when measuring people's commitment to use online service, results showed that a large percentage of people who would use government online services actually preferred traditional methods for conducting services. Regarding the independent variables e-Society had low trust in the Internet

which reflects the effect of the lack of effective and well established regulations and laws protecting online users in Jordan. Internet trust has been followed by trust in government and previous experience with online government with all three variables scoring average negative results. Awareness had a positive total score not forgetting that although awareness in total scored positively most of the respondents' awareness came from their own experience not from government advertising or branding. Compatibility had the most positive score and this had been expected since most participants in the survey were well experienced Internet users. Finally capability, 86% of the e-Society sample thought that Internet prices are expensive or very expensive, 75% did not have a credit or debit card. Table 6.9 gives the average mean score for all variables except capability. Appendix 3 at the end of the thesis presents the variables and their itemised statistical results in detail.

Table 6.9: Variables results summary

Variable	# Items	Mean	Stand. Dev.
IU	4	3.19	1.56
Trust in the Internet	3	2.60	1.23
Trust in Government	4	2.78	1.31
Compatibility	3	3.83	1.35
Previous Exp.	3	2.73	1.24
Awareness	4	3.51	1.43

6.7 Testing the Reliably of the Instrument

The reliability analysis process calculates a number of frequently used measures of scale reliability and also presents information about the relationships between individual items in the scale (Marija, 2004). The reliability of the items used in the instrument developed to measure dependent and independent variables has been evaluated using Cronbach's alpha analysis (Cronbach, 1970). Cronbach's alpha analysis has been previously used to determine reliability of items measuring variables in similar e-Government studies (Carter & Belanger, 2004; Carter & Belanger, 2004b; Carter & Belanger, 2005; Schaupp & Carter, 2005). Data collected by survey (n=660) has been used to compute Cronbach's statistic alpha. This has been performed using SPSS 14.0. Table 6.10 shows the alpha reliability statistics for each scale as computed from the full data set, demonstrating acceptable reliabilities (above 0.70) for all scales.

Table 6.10: Reliability analysis

Construct	Number of Items	Reliability
Trust in the Internet	3	.958
Trust in Government	4	.910
Awareness	3	.807
Compatibility	3	.898
Previous experience	4	.940
IU	4	.882

6.8 Testing the Construct Validity of the Instrument

There are two main uses for factor analysis. One is that it is frequently used in data decrease to identify a small number of factors that explain the majority of the variance that is observed in a much larger number of manifest variables. The second use of factor analysis is to produce hypotheses regarding causal mechanisms or to screen variables for subsequent analysis. This will examine the underlying (or latent) relationships between the variables (Gorsuch, 1983; Marija, 2004). In the case of this research factor analysis is used to examine the underlying relationships between the items constructing variables so that constructivism of the tool is measured.

Factor analysis using principle components with promax rotation has been used to evaluate construct validity for independent variables except capability, this method was previously used in similar e-Government research by (Carter & Belanger, 2004; Carter & Belanger, 2004b; Carter & Belanger, 2005; Schaupp & Carter, 2005) in order to examine the construct validity of their questionnaire. Principal components analysis is a factor extraction method used to form uncorrelated linear combinations of the observed variables (items), it can be used when a correlation matrix is singular. Promax rotation is an oblique rotation, which allows factors to be correlated, this rotation can be calculated more quickly than a direct oblimin rotation, so it is useful for large datasets SPSS (2005). Table 6.11 shows the results of Factor analysis using principle components with promax rotation.

Table 6.11: Factor analysis

	Factor Loadings				
	Trust Public	Pervious Experience	Trust Internet	Awareness e-Gov	Comp. of User
TP_2	.891				
TP_4	.942				
TP_1	.859				
TP_3	.940				
Exp_1		.896			
Exp_2		.920			
Exp_4		.781			
Exp_3		.825			
Tint_1			.924		
Tint_2			.862		
Tint_3			.811		
AW3				.747	
AW1				.722	
AW2				.990	
Comp1					.815
Comp3					.955
Comp2					.694

Results revealed that all independent variables loaded properly. This supports the constructability of the tool, however when including the dependent variable IU in the factor analysis all variables load properly except compatibility. One of its items (compatibility with payment online) loaded together with IU e-Government. This indicates a strong relationship between computability of payment and IU. In previous research compatibility items loaded together with relative advantage variable (Moore

& Benbasat, 1991; Carter & Belanger, 2004; Carter & Belanger, 2005). Carter & Belanger (2005) explain that the reason some items of some variables might load together is because "this may mean that, while conceptually different, they are being viewed identically by respondents, or that there is a causal relationship between the two. For example, it is unlikely that respondents would perceive the various advantages of using state e-Government services, if its use were in fact not compatible with the respondents' experience or life style".

6.9 Testing the Hypothesis

Two different approaches have been used to test the proposed hypothesis. The first approach included using simple direct statistical methods by measuring relations between different variables using normal correlations and t-Tests; the second approach included making use of more advanced analytical methods (multiple regression analysis) to test the relationship between dependent and independent variables.

6.9.1 Testing Adoption Model with Simple Analysis

a) Testing Model with Bivariate Correlations

Correlation measures the relationship between two variables, or sets of variables (Abdi, 2007). The computations for correlation are similar to those for the regression of independent and dependent variables, but for correlation there is no assumption of causation (i.e. while the variables may change together in some way, one variable is not necessarily causing the other to change). Bivariate Correlations have been used to determine the relation between variables. The Bivariate Correlations procedure computes the pairwise associations for a set of variables. It is useful for determining the strength and direction of the association between two scale or ordinal variables. Table 6.12 displays the correlation between dependent variable IU e-Government services and the independent variables except the capability.

Table 6.12: Independent variables correlations with IU

	Pearson Correlation	Covariance	N
Compatibility	.760 (**)	.679	638
Trust in Public Sector	.733 (**)	.769	630
Previous Experience	.651(**)	.724	487
Trust in the Internet	.666 (**)	.702	632
Awareness	.495 (**)	. 562	622

** Correlation is significant at the 0.01 level

Results revealed there is a strong positive relation between the IU variable and compatibility, trust in public sector, previous experience with e-Government and trust in the Internet. Awareness scored less significantly for positive correlation as well as

less correlation covariance therefore further statistical tests have been carried out on the awareness variable.

b) Awareness and the Usage of e-Government (t-Test)

The Pearson Correlation result has not been highly significant between awareness and IU when compared to other variables. The survey contained a question asking people whether they had ever visited a government website and a considerable number of the sample 25% (N=162) had not visited a government website. A t-Test using SPSS 14.0 was conducted to determine the total awareness level among people who have and have not visited government websites. A t-Test for independent groups is useful when the researcher's goal is to compare the difference between means of two groups on the same variable (Pavkov & Pierce, 2003). Results are shown in appendix 4.

Results reveal that people who have visited government websites have scored a higher mean of awareness than people who did not. Furthermore there is a significant relation between the higher awareness level and visiting government websites. An additional step has been taken by conducting a t-Test to measure the effect of the single item (had the respondent ever heard of the Jordanian e-Government) from the 3 items creating the awareness variable; to find out what impact it had on people visiting government websites. Similar to the previous results people who visited government websites had a higher mean in hearing about the Jordanian e-Government. Also hearing about the Jordanian e-Government had both positive and negative significance for people visiting government websites.

c) Testing Capability Variable

The effect of capability on the IU e-Government has not been directly measured through correlation analysis because the sample is representing the e-Society therefore the sample is presenting capable citizens both in skill and connection. People with low connectivity and skill levels are expected to participate in small numbers leading to the distribution of the sample being unreliable, which makes it impossible to quantify their results. However, various questions have been designed to measure the Jordanian society capacity for consuming e-Government and the effect of higher capability on the IU e-Government services.

86% of the e-Society in Jordan believed that Internet connection prices are either expensive or very expensive and this opinion coming from people who are benefiting from the Internet and are mostly from the middle and upper class indicates that people from lower classes who do not know how to use the Internet or benefit from it will observe Internet prices to be extraordinarily expensive. This means that cost is considered to be a barrier to making people able to connect online and use e-Government in Jordan. Another important finding has been that around 75% of the e-Society in Jordan did not have a credit or debit card which reflects the low capability level even among the e-Society to be able to conduct integrative services since they lack an online payment capability mechanism.

Regarding skill capability, Internet characteristics of participants revealed that out of the 660 only 8 participants (≈1%) monthly used the Internet and only 6 cases (around 1%) rarely used it. Only 12 (≈2%) had less than 1 year's experience in using the Internet and 32 accessed the Internet from a location other than home or work which might be an Internet café, or a friends' computer. Table 6.13 displays respondents' internet characteristics.

Table 6.13: Participants Internet skills

Internet usage level	Daily	Weekly	Monthly	Rarely
	87%	11%	1%	1%
Years of experience	< 6 Years	3-6 Years	1-3 Years	>1 year
	56.4%	27.6%	13.7%	1.9%
Internet access	Home & work	Home only	Work only	Other
	62.7%	13.7%	18.0%	5.0%

The low participation and representation of people who don't own computers and people with little experience of the Internet is most probably because people with low capability levels have limited computer and online skills therefore they have not been able to conduct the simple task of finishing the online questionnaire. Furthermore, people with low capability will not only struggle to connect online but will also have fewer IU and demands on e-Government services, this was proven by previous e-

Government research (Moon, 2002). Statistically as expected the representation of people with low capability has been extremely low which makes correlation and regression analysis not an efficient tool to determine the relation between the IU e-Government and low capability. The Internet access item[15] had the only acceptable statistical representation (in total a group of over 30) of a items presenting the capability variable which made it possible to conduct a statistical test to determine the effect of the capability level on the IU e-Government services. When running a mean comparison analysis, table 6.14, between people with different Internet access levels, results indicated that people with higher access levels will have higher intention levels to use e-Government and people with low Internet access level will have very low IU e-Government services. t-Tests presented in appendix 4 confirmed the significant relation between access level and IU e-Government.

Table 6.14: IU Relation with Internet access (mean comparison analysis)

Internet Access	IU Mean	N	Std. Deviation
Home & work	3.1698	402	1.23296
Home only	2.8942	78	1.10012
Work only	2.8304	112	1.41589
other	2.1750	40	1.30850
Total	3.0127	632	1.28066

6.9.2 Testing Adoption Model with Advanced Analysis

In statistics, regression analysis is used to model relationships between variables, verify the magnitude of the relationships between variables and can be used to construct predictions based on the models. Mendenhal & Sincich (1993) declares that the purpose of a regression analysis is to relate a dependent variable to a set of independent variables. In the case of this research following the footsteps of previous researchers (Carter & Belanger, 2004; Carter & Belanger, 2004b; Carter & Belanger, 2005; Schaupp & Carter, 2005) who used multiple linear regression analysis to test independent variables affecting the IU e-Government services. Carter & Belanger (2004) stated when testing a similar model which studied variables affecting citizens' adoption of e-Government initiatives "Regression analysis was seen as the most appropriate analytical technique since the goal of this study was to determine the

[15]Indicator question. Do you access the internet at: 1.Home & work 2. Home only 3. Work only 4.Other

relationship between use intention (dependent variable) and citizen perceptions of state e-Government initiatives (independent variables)."

a) Testing Demographics and Assumptions

Prior to hypotheses testing, a regression analysis has been performed to assess the significance of the demographic characteristics. The demographic characteristics have been used as independent variables and IU as the dependent variable. Results revealed that none of the demographic characterises was significant. Assumption of linear regression we conducted One-Sample Kolmogorov-Smirnov. There were no violations of the assumptions since p-value of were more than 0.05 for all variables (Hutcheson & Sofroniou, 1999).

b) Testing Multicollinearity and Outlier Influential Observations

Multicollinearity has been tested and proved not a concern with this data set confirmed by the main effect regression models with variance inflation factors (VIF range from 1.463 to 2.928). VIF may be used in lieu of tolerance as VIF is simply the reciprocal of tolerance. The law of thumb is that VIF > 4.0 when multicollinearity is a problem. Some authors use the more lenient cut-off of VIF >= 5 when multicollinearity is a problem (Garson, 1998).

Outlier influential observations have been identified using two methods, leverage studentized residuals and the second Cook's D-statistic (Garson, 1998). Outliers are one type of violation of homoscedasticity. Detected in the analysis of residuals and leverage statistics, they are cases representing high residuals (errors) which are clear exceptions to the regression explanation. High residuals usually influence the regression model more than others therefore they must be eliminated. The leverage statistic varies from 0 (no influence on the model) to 1 (completely determines the model). A rule of thumb is that cases with leverage under .2 are not a problem, but if a case has leverage over 0.5, the case has undue leverage and should be examined for the possibility of measurement error or the need to model such cases separately (Garson, 1998). Figure 6.14 display outlier influential observations using leverage studentized residuals.

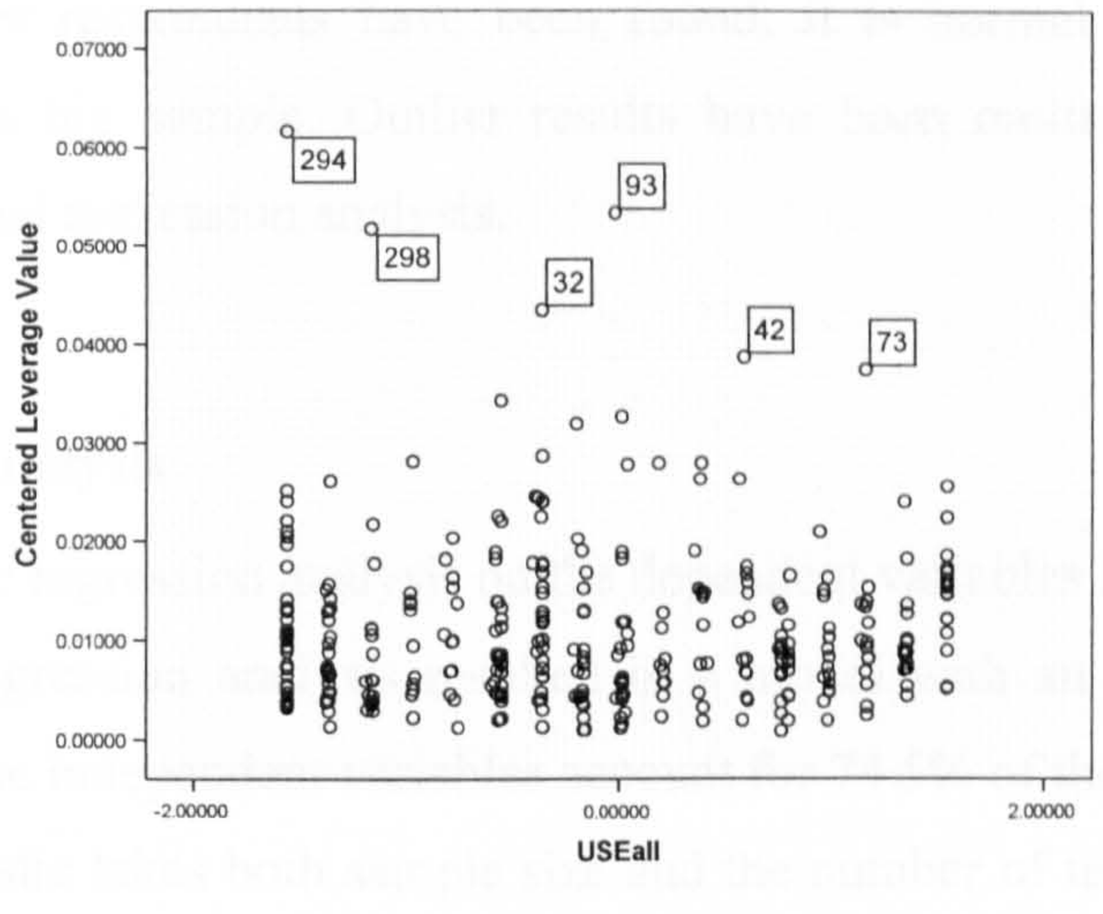


Figure 6.14: Outliers identification using Leverage Studentized Residuals

Cook's distance is another measure of the influence of a case. Cook's distance measures the effect of deleting a given observation. Observations with larger D values than the rest of the data are those which have unusual leverage (Garson, 1998). Fox (1991) recommends as a cut-off for detecting influential cases, values of D greater than 4/(n - k - 1), where n is the number of cases and k is the number of independents. Others suggest D > 1 as the criterion to constitute a strong indication of an outlier problem, with D > 4/n the criterion to indicate a possible problem(Garson, 1998). Figure 6.15 display outlier influential observations using cook's distance.

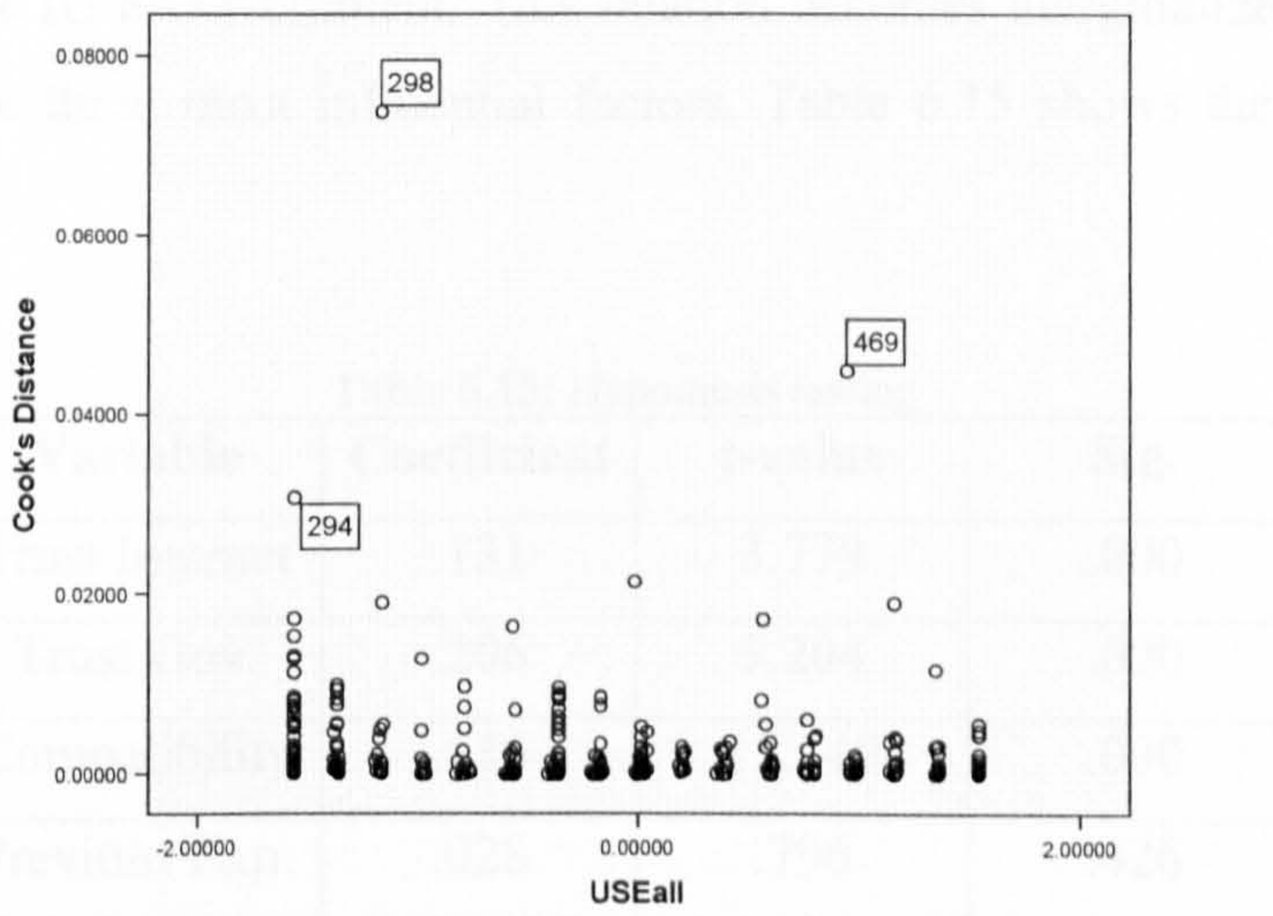


Figure 6.15: Outliers identification using Cook's Distance

In total 9 outlier respondents have been found, it is normal to have few outlier respondents in a big sample. Outlier results have been omitted and therefore not entered in the final regression analysis.

c) Regression Analysis

After running the regression analysis on the dependent variables IU and 5 independent variables, the regression analysis resulted in a model with an adjusted R^2 of .745, indicating that the independent variables account for 74.5% of the variation in IU. The adjusted R^2 statistic takes both sample size and the number of terms in the regression model into account. It is a more conservative statistic than the unadjusted R^2. The F statistic for the regression equation (F=257 5/438 df) is significant at $p<0.001$, which indicates that at least one of the coefficients corresponding to an independent variable is not equal to zero and the overall model is significant. Regression analysis results revealed that compatibility, trust in government and trust in the Internet are significant factors that will increase the IU e-Government between citizens in Jordan. However, awareness and previous experience with e-Government although being correlated with the IU e-Government, when entered into the regression analysis with other variables, have led to an insignificant result. This indicates that compatibility, trust in the government and trust in the Internet have the highest influential effects on people's IU e-Government in Jordan, although awareness and previous experience will increase the IU e-Government. This relation becomes marginalized when taking into account the three most influential factors. Table 6.15 shows the results of the analysis.

Table 6.15: Hypothesis testing

Hypothesis	Variable	Coefficient	t-value	Sig.	Support
Hp2	Trust Internet	.131	3.779	.000	YES
Hp3	Trust Gov.	.206	5.204	.000	YES
Hp4	Compatibility	.516	15.545	.000	YES
Hp5	Previous Exp.	.028	.796	.426	NO
Hp6	Awareness	.092	3.237	.001	NO

The regression analysis findings supports the findings of previous research by Carter & Belanger (2005) who found compatibility, trust in the Internet and trust in the government as influential factors on the IU e-Government services, compatibility was also found to be influential in the IU e-Government services and e-Voting systems when researched by Schaupp & Carter (2005).

6.10 Discussion

The survey revealed that the people who responded to the online questionnaire (e-Society) have specific characteristics. This includes being young in age, highly educated, male and living in the capital Amman. People not having these characteristics had a very small participation in the questionnaire. This finding is compatible with previous e-Government and digital divide research conducted in the developed world and in some big developing countries including China, India and Turkey, where age, gender, education, location and income have been found as being important characteristics in determining whether a person is or is not an Internet user. Findings of the questionnaire also indicated that people who responded to it have a high level of Internet skills, a higher access level, in addition to using the Internet on a regular basis. However, 86% of them thought Internet prices are expensive or very expensive and only 25% had a credit or debit card.

IU e-Government which measures the demand on e-Government services showed a satisfactory level of demand on informative services since 66% of participants would use government websites to obtain information. The level of demand dramatically decreases as the services level of e-Government increases, only 32% of participants would use government websites to conduct a simple transaction and 29% would pay online. This finding supported the first hypothesis which assumed that the e-Society will not demand high levels of online service. This finding is not surprising since e-Business and the EC environment is not well developed in Jordan. Most of the sample although having a high level of experience in using the Internet, have experience that goes no further than using informative or simple interaction such as using the e-Mail. Therefore they demand services that are more compatible with their experience. The culture of the Jordanian society as well plays an important role in determining the

level of demand for e-Government services since most Jordanians are not convinced by online methods. They prefer to go face to face to use services and hear and observe the government employee assuring them that their service is complete. This may be because of the sophisticated nature of governmental services where the approval of many governmental agencies is required including military and security agencies in most cases.

When testing the 5 hypothesised independent variables affecting the IU e-Government, results proved trust in government and the Internet, in addition to compatibility, as the most significant variables. Although awareness and previous experience are also related to the intention to use e-Government their effect is limited by the presence of the three most effective variables. Table 6.16 summarises hypothesis, exams and findings.

Table 6.16: Hypothesis test summary

Hyp #	Hypothesis	Construct	Method of test	Supported
1	Most of the e-Society in Jordan will not transact with Government, the only demand is for informative e-Government.	Intention to Use (IU)	Descriptive statistics (Frequency)	Yes
2	People with high trust in the Internet will have more intention to implement e-Government	Trust in the Internet	Regression Analysis	Yes
3	People with high trust in the government will have more intention to implement e-Government.	Trust in government	Regression Analysis	Yes
4	People who are compatible with e-Government will have more intention to implement e-Government	Compatibility	Regression Analysis	Yes
5	People with previous positive experience with e-Government will have more intention to implement it.	Previous experience	Regression Analysis	No
6	People with more awareness of e-Government will have a higher intention to use it	Awareness	Regression Analysis	No
7	People in Jordan generally have low connection capabilities, whereas respondents will be highly experienced Internet users.	Capability	Descriptive statistics (Frequency) Inferential statistics (Mean, t-Test)	Yes

Hyp= Hypothesis

Previous experience failed in the regression analysis to prove to be a significant variable although many researchers (Lee-Kelley & Kolsaker, 2004; Jaeger & Thompson, 2004; Reddick, 2005; Welch et al., 2005) highlighted its importance in increasing people's demand on e-Government services. However, some of the already mentioned researchers as well as others (Parent et al., 2004; Welch et al., 2005; Tolbert & Mossberger, 2006) indicate that previous experience with e-Government could have a direct positive relation to trust in government. Therefore previous experience could have an indirect relation with the intention to use e-Government. Additional statistical tests have been conducted to measure the level of trust in e-Government related to previous experience. Results revealed that trust in the public sector and previous experience with e-Government is highly correlated. When running linear regression between trust in government and previous experience, previous experience proved to have a significant relation to trust levels in Governments, see appendix 4 for regression results details. Figures 6.16 summarises the regression analysis findings.

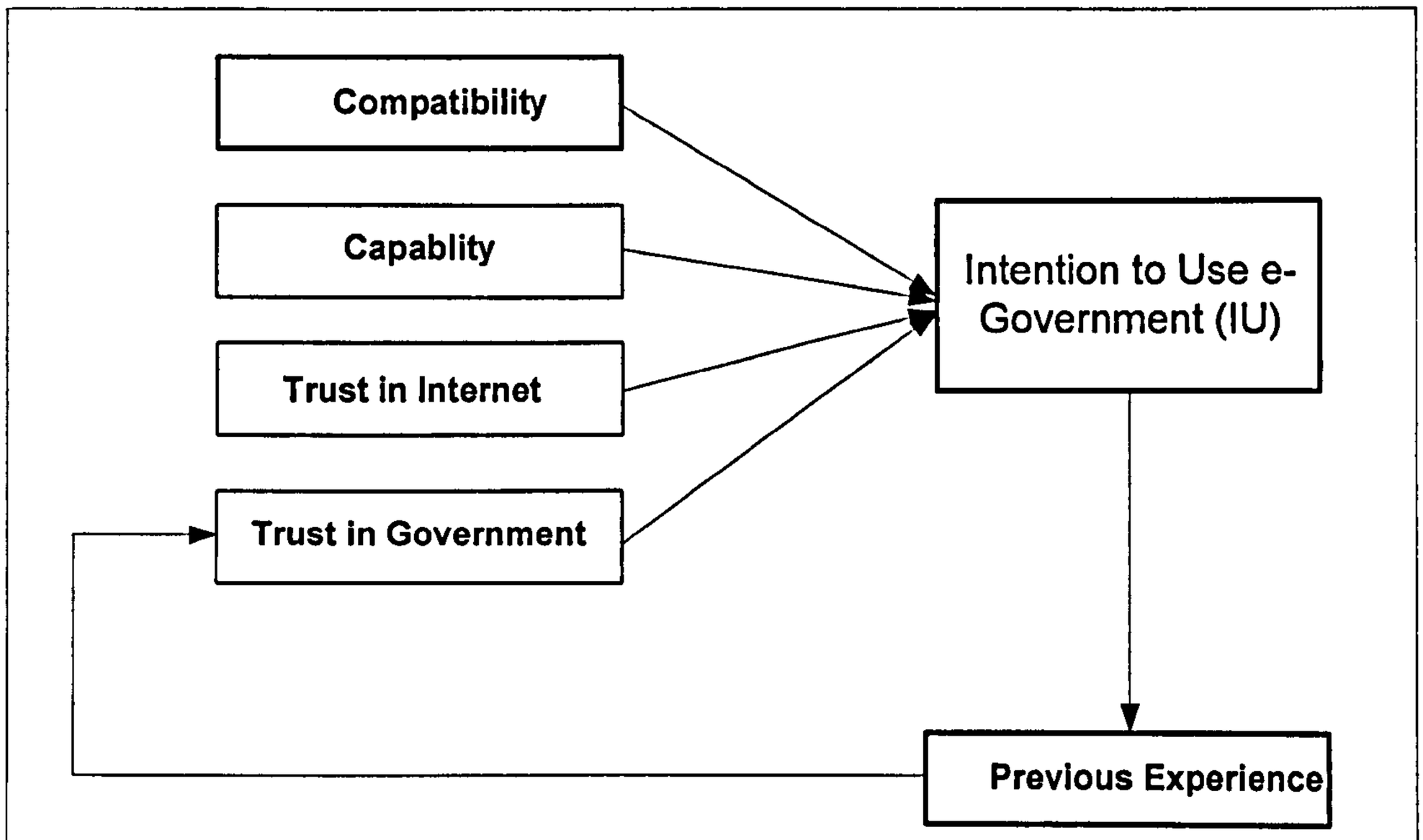


Figure 6.16: Findings

Furthermore results revealed that people have modest trust in public sector and the Internet in addition to having some level of compatibility with e-Government services. Therefore if the Jordanian Government wishes to deliver advanced online

services it must satisfy and increase trust in public sector and the Internet and integrate ICT with education, working methods and commercial activities in order to increase compatibility with e-Government services and respond to the variables which are more effective in increasing the demand on e-Government services. The following two chapters will examine how effective the Jordanian Government has been with its execution and supply of e-Government services and how successful the Jordanian e-Government has been in responding to people's needs.

6.11 Summary

There are many questionnaire types available to collect data in order to statistically examine any proposed hypothesis. For the purpose of this research an online questionnaire has been the most appropriate type since it will examine the needs of Internet users who are the most likely citizens in Jordan to adopt e-Government services. An online questionnaire proved to be an effective tool for gathering data, with more than 660 participants successfully completing the online questionnaire. The current research shows that Internet users in Jordan have a modest demand (39%) at the informative level of e-Government. The level of demand dramatically decreases as the services level of e-Government increases. The level of demand on e-Government is expected to be much lower among people who are not internet users and who account for more than 80% of the Jordanian population (Dutta et al., 2004; 2006). Based on that, the Jordanian Government may have to concentrate on achieving high quality low level informative services before moving to more advanced levels.

Results also indicated that people need trust in the Internet, trust in government, compatibility with e-Government services, in addition to having a high accessibility level to the Internet and computers, in order to consume e-Government services. Based on that, the Jordanian Governments must integrate citizens' needs to e-Government strategy and the process of service development and delivery in order to achieve maximum benefits from their e-Government promises.

Chapter 7

Examining the Implementation and the Supply of e-Government in Jordan

7.1 Introduction

In the previous chapter the demand side of e-Government in Jordan has been examined. This part of the research will discover Jordan's success in the supply and implementation of e-Government up until the beginning of the year 2007. This procedure will be executed based on document analysis. The Chapter starts by presenting the Jordanian country profile, following that a review will describe the emergence of e-Government in Jordan, its implementation and achievements. Citizen's position in the announced Jordanian e-Government strategy will be reviewed. Finally the discussion will focus on identifying the major problems with the implementation of e-Government and re-evaluating Jordan's response to citizens' needs.

7.2 Background to the country of Jordan

7.2.1 History, Politics and Democracy

Jordan is a country that gained its independence from British administration in 1946. Jordan was ruled by King Hussein (1953-1999) who was a successful political ruler; he effectively balanced competing pressures from the main powers (USA, USSR and the UK), neighbouring Arab states, Israel and a large domestic Palestinian population. King Abdullah II, the son of King Husséin, assumed the throne following his father's death in February 1999. Since then, he has consolidated his power and pronounced aggressive economic reform programmes. Jordan joined the World Trade Organization in 2000 and began to participate in the European Free Trade Association in 2001. After a two-year delay, parliamentary and municipal elections took place in

the summer of 2003. The prime minister appointed in December 2005, Dr. Marouf al Bakhit, proclaimed that the government would improve conditions for the poor, focus on political reforms and fighting corruption (CIA, 2006).

Regarding the democratic process, in 1989 parliamentary elections have been reinstituted in Jordan after decades of the country leaving under emergency law. However, different criticisms have been elevated about the way in which elections have been held (Gardener, 2002, Posusney, 2002). Wiktorowicz (2002) argues that despite the move towards democracy, there has not been the promotion of independent institutions of power capable of having influential public policy or the political sphere. And although the parliamentary process was revived and regardless of the formal agreements over the legitimate liberalised political arena contained in the 1991 National Charter, there has been a small progress with the Jordanian legislature (Joffe, 2002). The countries hostile geographical location in addition to more than one third of its population being Palestinian refuges makes moving towards democracy and limiting the military culture over the countries institutions hard to achieve.

7.2.2 Economy

Jordan with its limited resources does not seem to compare with neighbouring countries. The major natural resources can be said to be confined to the components of cement, as well as phosphates, gypsum, limestone, salt and potash (Wilson, 1991). The currency is the Jordanian Dinar (JD) which is equivalent to US $1.5 The Jordanian budget revenue is US $4.191 billion and expenditure is US $5.305 billion including capital expenditures of US $1.092 billion (CIA, 2006). The annual Jordanian GDP per capita is US $4500 and Jordan has the position of 103 out of 210 countries around the world. The Jordanian economy relies on money transfer from people working abroad in the gulf and USA, also international aid mainly from the USA and the EU. The service sector and tourism has increased dramatically in the past few years, also Jordan has become attractive as a place to live to wealthy people from countries in the region, who are seeking stability. The distribution of economic sectors in Jordan is as follows, GDP/sector: agriculture 4%, industry 26%, services

70% (Library of Congress, 2006). In general Jordan suffers from high unemployment and has one of the highest foreign debts per capita in the world (UN, 2005).

7.2.3 Geography

The land of Jordan is situated in a strategic location in the heart of the Middle East area, between Syria (North), Saudi Arabia (South), Iraq (East), Palestine and Israel (West); one may also observe that Jordan is located among the supposedly potentially hostile nations (CIA, 2006). The land survey gives its area as 92,300 sq km. Jordan's capital is Amman with a population of 2 million. Other main cities include, Zarqa, Irbid, Aqaba and Salt. Figure 7.1 shows Jordan's geographical location.

Figure 7.1: Jordan Geographical location. CIA (2006)

7.2.4 Jordanian Population Profile

The population of Jordan is approximately 6 million, (CIA, 2006). Over 50% of Jordanians are between 18 and 30 years of age. The official language in Jordan is Arabic furthermore English is widely spoken among the middle and upper class. Jordan has the highest rate of college-educated people in the region (UN, 2003b), the literacy level being 91.3%. The population below the poverty line is around 30%, the official unemployment rate is about 12.5%. The country's religion is Islam, with 94%

of the total population being Muslims, followed by Christianity which accounts for 6% of the population. Generally speaking, Jordanian society has been influenced or inspired by all the cultures found in the region, most importantly by the roots of pre-Islamic Arab culture and Islamic culture as well as Western culture (Drysdale & Blake, 1985). Table 7.1 surmises Jordan's key statistics.

Table 7.1: Key Statistics on Jordan. (CFID, 2002, CIA, 2006, DOS; 2005)

Population, 2006	5,924,000
The land survey	92,300 sq km
Independence Date	1946
GDP per capita (PPP), 2006	$4500
Global Competitiveness Index Ranking, 2001-2002	45
UNDP Human Development Index Ranking, 2001-2002	61
Internet Users, 2005	8.1%
PCs / 100, 2005	4.5%
Mobile Phones / 100, 2005	24.19%

7.3 Document analysis

The main research method used in this chapter has been document analysis. Flatirons Solutions Corp (2001) defines it as "The practice of examining a set of documents that are used to support specific business goals and objectives. A document can take many forms; it may be a complex technical manual that is delivered to a client, a customer facing web page that is updated at determined intervals or an internal e-mail memo".

Marshall & Rossman (1995) described document analysis as "the systematic examination of forms of communication to document patterns objectively". Stake (1995) noted "Gathering data by studying documents follows the same line of thinking as observing and interviewing". Document analysis is therefore the systematic examination of instructional documents such as government strategies, reports, presentation, websites, media announcement and any other sources of data related to the topic investigated in order to identify specific needs and challenges and describe an activity. The focus of the analysis is critical examination, rather than a mere description, of the documents. The analysis should include questions which satisfy the purpose of the analysis.

Purpose of the Document Analysis: Document analysis works best when the purpose is to gain insight into a specific activity or approach. In this research, document analysis has been used to contribute to solving the research problem "the existing gap between supply and demand of e-Government in Jordan". Because it is too cumbersome to examine every aspect of e-Government in Jordan at once, document analysis is established by setting a clear goal about what will be learnt and narrows the researcher's focus (Altheide, 1996). For this research goals have been set up to examine e-Government in Jordan from the supply side by:

- Reviewing the development of e-Initiatives in Jordan
- Analysing the progress of e-Government in Jordan
- Assessing declared e-Government achievements and outputs
- Identifying key strategic problems affecting the supply of e-Government
- Identifying citizens' position within the Jordanian Government

- Assessing e-Government response to citizens' needs

Determining and collecting target documents: The second step in document analysis after identifying the purpose and goals of the document analysis is to identify the sources of data that will be used to address analysis goals. In this research more than 120 Governmental publications related to the Jordanian e-Government have been used. Sunders et al., (2003) supports the use of document analysis in a piece of research especially the use of government documents by stating, "many of the secondary data sets available from governments and data archives are of higher quality than you could ever collect yourself". Analysed documents include the Jordanian e-Readiness Report, the Jordanian e-Government initiative and strategies, publications presentations and conference papers from the Ministry of Information Communication Technology (MoICT) the owner of the e-Government project in Jordan. Other documents have been obtained when visiting different government agency during two visits to Jordan on July 2005 and Jun 2007, agencies included e-Government Programme Office, the National Information Technology Centre, Ministry of Education and the Ministry of Planning. The final source of document has been government announcements through media, news paper articles and governmental websites have been used as well to carry out the document analysis.

Reviewing and analyzing documents: The final step of the document analysis is to review and analyze documents rather than merely describing documents and to examine them critically (Weber, 1990). The following points summarise the steps used to conduct the document analysis:

- Start with evaluation goals.
- Read all the documents.
- Label ideas as progress goes on.
- Organize ideas by similar content and identify repeating ideas.
- Attempt to identify themes-patterns or associations and causal relationships among repeating ideas.
- Try to understand causes and potential implications of findings and establish relationships conclusions.

7.4 The Beginning of the e-Era in Jordan

In order to have a full picture of the development of the e-Government project in Jordan, a review has been conducted of the emergence of e-Initiatives in Jordan that led to the development of e-Government. The rise of the e-Era in Jordan began when King Abdullah the Second of Jordan assumed his constitutional powers as Monarch of the Hashemite Kingdom of Jordan on February 7th, 1999, the day his father, the late King Hussein, passed away (Corsi, 2007). Considered to be a young leader for the Kingdom of Jordan which has limited resources, King Abdullah II launched a number of ICT related initiatives to modernize Jordan (Kulchitsky, 2004; Navarra, 2006). The REACH initiative in 1999 was the first to be launched; it promised to play a central role in economical and social development in Jordan (REACH, 2000; NIC, 2001). King Abdullah II was quoted (MoICT, 2003c) as saying in the World Economic Forum in Davos , Switzerland, 2000:

> "It is time to widen the scope of our participation in the knowledge economy from being mere isolated islands on the periphery of progress, to becoming an oasis of technology that can offer the prospect of economies of scale for those who venture to invest in our young available talent."

Based on that some researches (Ciborra, 2005) saw Jordan as a textbook case, because of its vision, to become the Singapore of the Middle East in the adoption of ICT.

7.4.1 REACH Initiative

The REACH initiative began in 1999, it laid out a goal to bolster Jordan's nascent IT sector and maximize its ability to compete in local, regional and global markets. The REACH initiative is partially sponsored by the USAID-funded AMIR Programme[16]. REACH as a concept is the sum of abbreviations Regulatory Framework, Enabling Environment (Infrastructure), Advancement Programmes, Capital & Finance, Human Resource Development.

It first carried out a critical review of Jordan's strengths and weaknesses in addition to other relevant competitor, based on that it outlined a 5-year timetable to meet goals. There was no clear implementation plan for the initiative. Instead the REACH (2000)

[16] AMIR Programme is an innovative economic opportunity project funded by the United States Agency for International Development (USAID) and implemented in partnership with Jordan's private sector and government.

report recommended general actions to be implemented by the private sector, the Government and by other stakeholders, to ensure a favourable place for Jordan in the Internet-based e-Economy. The Reach Initiative set the following targets to be accomplished in Jordan by the year 2004:

1. US $550 million in annual IT exports by 2004.
2. 30,000 IT-related jobs by 2004.
3. US $150 million in cumulative Foreign Direct Investment by 2004.

a) The Progress of the REACH Initiative

The Information Technology Association of Jordan developed an annual follow-up report on the initiative, from the year 2001 until the year 2004, the annual reporters reviewed achievements during each year, in addition to setting the main requirements and recommendations for the next year. Reports as well highlighted the progress of six main development strategies named REACH Enablers shown in figure 7.2.

REACH Enablers:

- Regulatory Framework Strengthening
- Government Support
- Enabling Environment
- ICT Industry Development
- Human Resources Development
- Capital & Finance

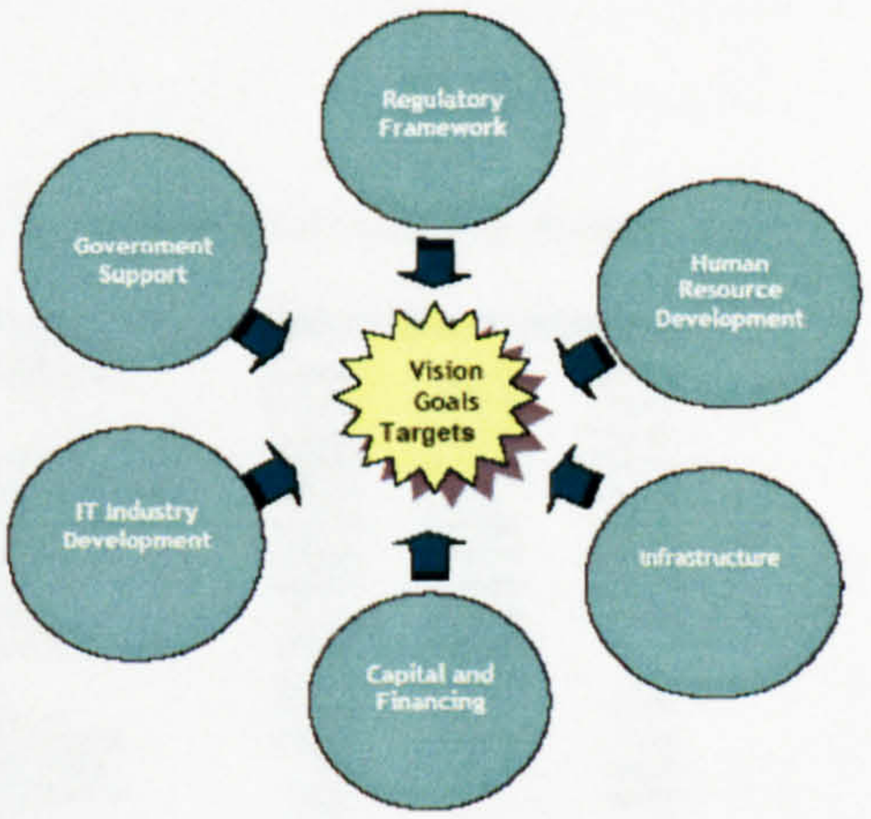


Figure 7. 2: REACH Enablers. REACH (2000)

b) REACH development Over 5 Years

When reviewing REACH reports (2000; 2001; 2002; 2004) it was clear that each year had almost the same recommendation for the next year in order to achieve announced goals. REACH enablers have been slowly implemented, problems and recommendations include the unavailability of funding, the need of laws (although

some have been adopted many are still pending to enable EC activities), the lack of human recourse power in specific areas, the lack of infrastructure and Internet connectivity. Achievements of the REACH initiative concentrated on human ICT power development by adopting ICDL[17], Cisco and other training programmes for government employees, the adoption of new laws, regulatory reform to liberalize the ICT market, also the implementation of the e-Government Initiative. Therefore e-Government although declared by the government as an initiative to serve people, it was mainly launched to go along with Jordan's e-Initiatives.

c) Measuring REACH Progress

Jordan becoming a major exporter of ICT products especially software in the region (ARAB and Middle East) is considered to be the main goal of the REACH intuitive. Therefore the development of the ICT industry in Jordan is the real measurement of the success of the initiative. REACH outputs in the year 2002, after 3 years of it implementation, revealed that REACH was far away from achieving any of the intended REACH goals (2004). Table 7.2 presents a comparison between domestic and export revenues of ICT sectors in Jordan based on the service of the sector, Table 7.3 presents a comparison between domestic and export revenues of ICT sectors in Jordan.

Table 7. 2: ICT Revenues by Service Sectors

	Total	Domestic	Export
Hardware Sales	56,879,809	56,529,665	350,144
Developed Packages Re-Sales	35,213,541	35,106,293	107,249
Complete SW Development	33,577,958	20,395,547	13,182,411
Communication	15,825,732	14,235,272	1,590,460
Web Development	13,364,589	11,355,810	2,008,779
Internet Services	13,000,574	12,897,724	102,850
IT Strategy Development	12,623,210	8,085,481	4,537,729
Application Support Services	11,163,419	8,440,919	2,722,500
System Development	7,927,639	4,688,012	3,239,626
Developed Packages Sales	6,876,842	3,926,185	2,950,657
System Design	6,557,003	4,515,128	2,041,875
Technology Provision	6,257,861	6,257,861	-
Other Services	5,474,982	424,744	5,050,238
Project Management	2,039,823	448,619	1,591,204
GIS	776,361	644,426	131,935
Interactive Media	745,355	315,805	429,550
System Documentation	180,357	180,357	-
Totals:	**228,485,054**	**188,447,848**	**40,037,206**

Table 7.3: ICT Revenues by Industrial Sectors

	Total	Domestic	Export
Government/ e-government	44,897,955	41,275,140	3,622,815
Other	40,723,968	36,770,026	3,953,942
e-Education	31,372,634	20,131,003	11,241,631
Financial Investment etc.	27,578,698	24,186,188	3,392,510
Business (Accounting, HRD, etc)	23,815,743	21,839,767	1,975,976
Services (restaurants, etc)	19,741,539	14,293,362	5,448,176
Manufacturing/ Industrial	14,589,963	10,987,277	3,602,686
Health Care Sector	6,670,104	2,304,592	4,365,512
Tourism and Travel	5,793,244	5,165,707	627,536
Internet-based/ Web/ e-business	4,264,268	4,264,268	-
Military	3,213,882	3,143,854	70,029
Religious Sector	2,316,037	1,408,537	907,500
Engineering & Construction	2,240,753	2,159,488	81,265
Multi Media and animation	768,454	344,954	423,500
Outsourcing/ Code Writing	254,100	-	254,100
Insurance Sector	243,713	173,684	70,029
Pharmaceutical, and Veterinary	-	-	-
Totals:	**228,485,054**	**188,447,848**	**40,037,206**

Source Reach (2004)

After analysing the Tables, the following conclusions have been reached:

[17] The International Computer Driving Licence (ICDL) is an internationally recognised qualification that enables people to demonstrate their competence in computer skills.

1. The domestic market was the highest consumer of ICT products with about 83% of the total ICT revenue in Jordan.
2. Export revenue which is considered to be the core indicator of the REACH initiative success scored only 17% of the total ICT revenue in Jordan. This indicates that Jordan instead of being an exporter of ICT might have become a consumer.
3. The highest revenue of ICT industry came from the hardware sales, furthermore since Jordan is not a hardware manufacture, hardware has been imported to be consumed in Jordan.
4. e-Government, e-Education and the Other Expenses category had the highest revenue in the domestic market with more than 50% of the total ICT consumption, this means that Jordan is heavily investing in both hardware and soft wear products in order to enable the country's e-Initiatives.

The final REACH report in the year 2004 supported previous figure analysis, it stated that REACH targets had not been achieved by the year 2004. Instead new targets have been setup up to be achieved in the year 2006 as shown in table 7.4. What was peculiar about the new goals is that ICT export products target has been reduced by a massive 82% from 550 Million to 100 Million. Nevertheless the target for domestic consumption has set to be a staggering 550 million.

Table 7. 4: REACH initiatives rescheduled goals. REACH (2004)

Original REACH Targets (by 2004)	**Revised REACH Targets (by 2006)**
US$ 550 million in annual IT exports	US $100m Annual Exports US $550m Domestic Revenues
30,000 IT-related jobs	30,000 IT-related jobs
US 150m Foreign Direct Investments	US 170m Foreign Direct Investments

The REACH (2004) report attempts to present new targets as a success for the REACH initiative. However, the reality behind these numbers is that Jordan has failed to become a major ICT exporter in the Middle East and the Arabic Region, instead Jordan became might have become a substantial consumer of ICT products in order to satisfy the many ICT initiatives the country is involved in such as e-Government ,e-Learning and Community Information Centres (NIC, 2001).

7.5 e-Government in Jordan

e-Government in Jordan is a national programme initiated by King Abdullah II in September of 2000. The MoICT previously known as the MoPC (the Ministry was renamed in the year 2003) started the e-Government programme towards achieving the e-Government vision by the year 2005 (MoICT, 2006). The vision was that e-Government would be a contributor to Jordan's economic and social development by providing access to e-Government services and information for everyone in the Kingdom irrespective of location, economic status, IT ability and education. e-Government would represent a major shift in the role of government towards the "client-focused" delivery of services, rather than government as a collector of information solely for its own purposes. The official documented driver behind e-Government in Jordan as announced by the MoICT (MoPC, 2002) declares:

> "Its early adoption is essential if Jordan is not to be left behind other emerging economies both in the region and worldwide and reflects the philosophy of "Jordan: Small Country, Big Ideas For Jordan", e-Government represents an opportunity to make a major contribution to economic development through assisting Jordanian businesses in reducing their operating costs in dealing with government and providing immediate access to government information that will assist their business development. This is achieved through electronic service delivery, electronic procurement and e-commerce. Similarly, the provision of e-services to citizens represents an opportunity to reduce the complexity of dealing with government administration, making government more transparent, accessible and responsive".

7.5.1 Building Blocks to Achieve the e-Government 2005 Vision:

In order to achieve the e-Governments vision by 2005 five major building blocks have been recommended by the MoICT (NIC, 2001; MoPC, 2002). These are:

- **e-Service Applications Identification:** Identify and initiate the first set of **Fast Track Projects** by the end of 2001.
- **Technology Infrastructure Development:** Install the necessary networks and improve communications and access infrastructure nationwide by the end of 2004.
- **Legal and Regulatory Framework Development:** Complete a review of laws and regulations requiring change by the end of November 2000 and draft enabling legislation and obtain Parliamentary approval by mid-2001.

- **Education Reform and Skills Development:** Work with the IT sector to set up a National Centre for e-Government Excellence within an existing IT college to deliver courses to the public sector, businesses and citizens.
- **Management and Organizational Structure Development:** Establish and make operational by January 2001, a National e-Government Taskforce and Technical Coordination Unit to develop a comprehensive e-Government master plan to manage the implementation process.

7.5.2 Jordan's Approach to the Deployment of e-Government

When the Jordanian e-Government started its deployment it identified seventeen domains as the major domains of the e-Government initiative in Jordan Communication, these are:

1. Economics
2. Education and Training
3. Health
4. Industry
5. Labour
6. Natural Resources and Environment
7. Population and Human Settlements
8. Tourism and Antiquities
9. Transportation
10. Geography
11. Agriculture
12. Law and Legislation
13. Research, Science and Technology
14. Society and Social Conditions
15. Political Affairs Culture

These categories would be used as the foundation for the e-Services that the government would provide for the citizens. All ministries in Jordan would attempt to automate their services and supply citizens with service (Al-Omari, 2006). In other directives each ministry had to deliver services online using their own approach for transformation which is guided and supposedly supervised by the MoICT. By means

the Jordanian e-Government strategy is also paralleled by other initiatives taking place within individual ministries, cooperating in a variety of cross-ministerial initiatives supposedly under the guidance of the MoICT, using information technologies to drive intra-governmental information flow, as well as to develop services based on transactional capabilities for citizens and businesses.

On the border level the MoICT is involved and responsible for the deployment of fast Track and other main infrastructure and e-Service e-Government projects across Jordan, various ministries are also involved in supervising and monitoring the major e-Government projects in Jordan, the Ministry of Planning oversees the early selection phase of projects, then the Ministry of Industry and Trade takes charge of the review and implementation stages together with the MoICT. The Ministry of Administrative Reforms is responsible for the policy formulation and coordination of all reform processes. The Prime Minister Office develops plans for initiatives whose time frames range within and beyond 3 years, enforces a standard procurement process and tools and uses a common project management methodology to monitor the status of the initiatives reporting directly to the MoICT (MoICT, 2003). However, the MoICT is considered the main ministry responsible for the implementation and development of the e-Government project in Jordan, it has been designated as the focal point for co-ordinating the implementation of the e-Government programme. More recently the MoICT developed an e-Government department (The E-Government Programme Office of the MoICT) within its structure which is the responsible body for the deployment of e-Government in Jordan.

7.5.3 Fast Track Projects in Jordan

Hit Projects, also known as Super Pilots, in the case of Jordan are known as Fast-Track Projects, all are high value low risk e-Government projects implemented by central government in order to motivate the implementation of e-Government projects in a country. Fast-Track Projects will bring numerous benefits to a country, the most important are:

1- Projects will have a big positive impact on citizens' business and Government; it will increase the public support for e-Government.

2- Projects will motivate other government agencies to implement e-Government by setting an example of successful e-Service delivery.

3- Projects will not require the integration of a number of government bodies, usually integration is required within the agency delivering the service.

Jordanian Government identified Fast Track Projects in the year 2000 as one of the main enabler for e-Government under the first building block named "E-Service Applications Identification". However, the Jordanian Government at that time was overambitious in setting not one or two Fast Track Projects, but eight Fast Track Projects intended to serve all stakeholders of e-Government (government, business and citizens). The projects were (MoPC 2002):

1. Fast-Track Project 1: Business Regulation (G2B)
2. Fast-Track Project 2: Taxation and Social Security (G2B)
3. Fast-Track Project 3: Selling to Government (G2B)
4. Fast-Track Project 4: Telecommunications Licensing and Regulation(G2B)
5. Fast-Track Project 5: Motoring Services (G2C)
6. Fast-Track Project 6: Real Estate Services (G2C)
7. Fast Track Project 7: Government Personnel Directory (G2G)
8. Fast-Track Project 8: E-Government Policy and Practice (G2G)

7.6 The Development of e-Government in Jordan

7.6.1 The Development of the Fast Track Projects

A presentation published by the MoICT (2003) entitled "Jordan e-Government Your Government at Your Service" indicated that Fast Track Projects were initiated in the first quarter of the year 2002. The Jordanian Government declared the goal of fully operating the projects (MoPC, 2002). Figure 7.3 shows the Jordanian e-Government development time line.

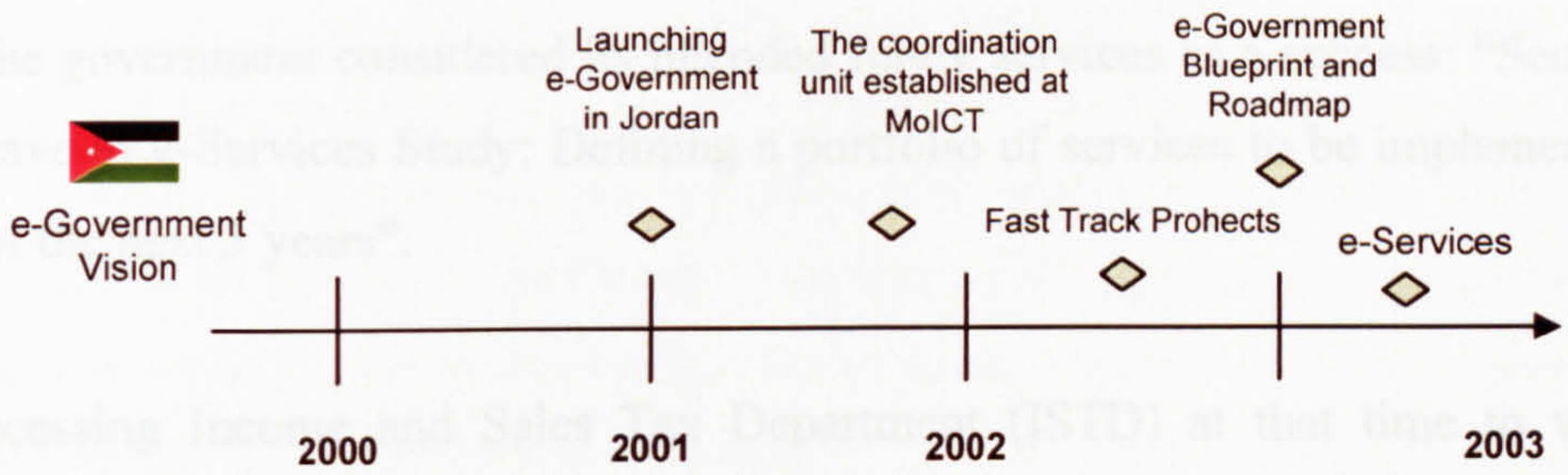


Figure 7.3: e-Government Development Time Line. MoICT (2003)

A presentation entitled " e-Government: Status Update" published by the ministry of MoICT (2003b) reviewing e-Government in Jordan, identified five e-Service projects instead of the eight Fast Track Projects that will be implemented during the next 3- 6 years. The projects are:

- Income Tax
- Sales Tax
- Drivers and Vehicle Licensing
- Lands and Survey
- Borders and Residency

This indicates that 8 Fast Track Projects have been changed and decreased to 5 major e-Service projects. It seems the Jordanian Government at this stage has realised the scale of work required to accomplish the intended Fast Track Projects. Not surprisingly two of the dismissed projects were Government Personnel Directory (G2G) and e-Government Policy and Practice (G2G), which may require intense coordination and integration between different government agencies and departments to function adequately. Following the year 2003 no official documents have been

published to state the progress of Fast Track Projects and in addition, up to the point of conducting the document analysis, no online services have been available for intended projects, except for informative websites for some departments related to the Fast Track Projects. On March 2006 the MoICT website contained some information on e-Services (MoICT 2006b). Information has been published under the section titled Success Stories/Best Practices related to e-Government, where information includes:

- The availability of Tax payment online "e-Services (including online and e-payment services) for Income and Sales Tax Department".
- The government considered its intended future services as a success: "Second wave of e-Services Study: Defining a portfolio of services to be implemented for the next 3 years".

When accessing Income and Sales Tax Department (ISTD) at that time to view service delivery which has been considered as an achievement, Tax payment services required the user to have a bank account with a specific bank in Jordan "Jordanian Housing Bank", also the user had to visit ISTD to apply and set up an account before being able to start using the service. In practice the service was no more than an online transfer organised by the Jordanian Housing Bank. The declaration of success did not stay posted for long on the MoICT website, even the service of paying online was removed from the ISTD in the following few weeks not to return. On July 2006 the MoICT (MoICT, 2003b) website was accessed to find that e-Services are considered to be within the functional area of the e-Government initiative. The e-Services had four main categories which included:

- Drivers and Vehicles Licensing Department (DVLD).
- Borders and Residency e-services.
- Income and Sales Tax e-services.
- Lands and Survey e-services.

This announcement on the MoICT website indicates that Fast Track Projects no more existed, in fact it indicated that fast successful projects have been redefined to be long goal functional outputs of e-Government in Jordan. Dryly the MoICT clearly explains the development of each of the four e-Service projects, dividing the progress of

service implementation into 4 different implementation phases. Also e-Services have been in the first two phases of implementation which are strategy creation and creating the implementation phase. When visiting the official government website of the departments responsible for the 4 e-Service projects, informative information was available online, but no high level of service delivery (interaction, transaction) was available. Income and Sales Tax online payment which had been considered a success story 4 months before had changed to being at the implementation stage.

7.6.2 Other e-Jordan Related Projects

The intention of the Jordanian e-Government when established has been to cover all aspects of business and citizen requirement and was not only concentrated on the Fast Track Projects, other projects that would fulfill citizens' interaction with e-Government in all aspects of life (health , education, civil registration, employment) were among Jordan's plan to implement e-Government. Figure 7.4 shows the aimed output of the Jordanian e-Government projects.

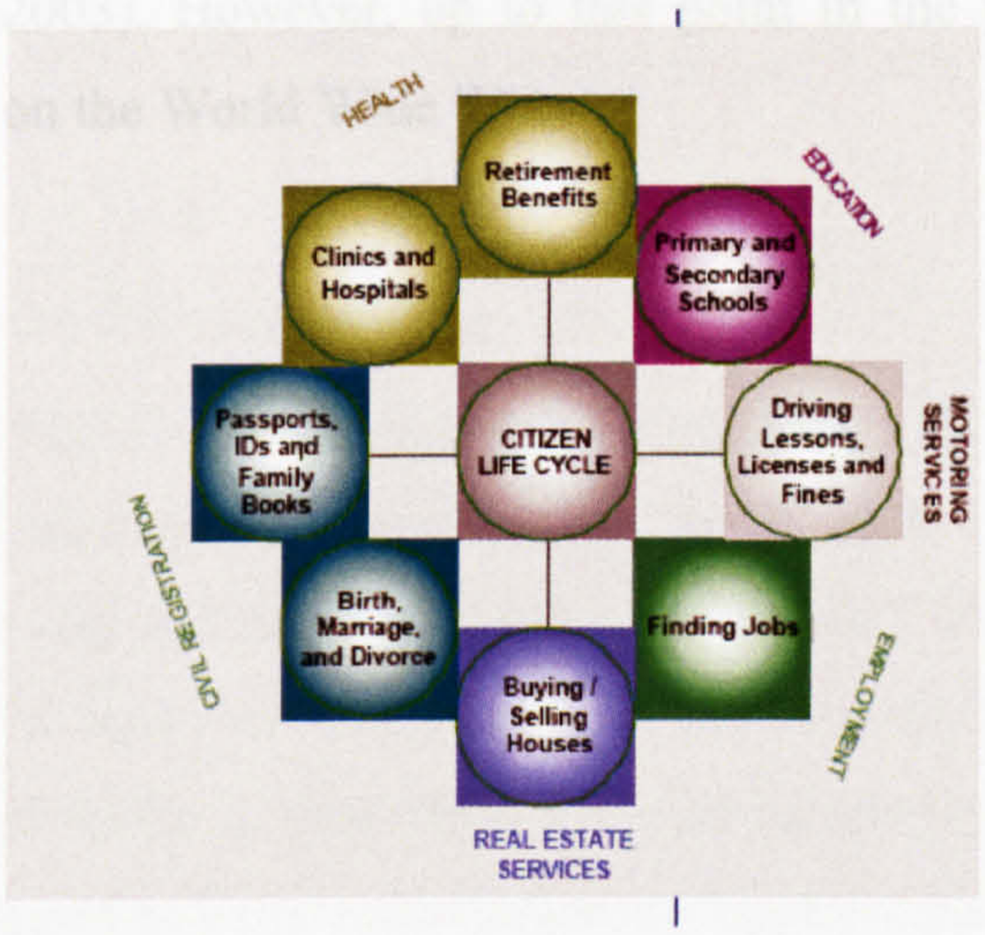


Figure 7.4: e-Government Prospects in Jordan. (MoPC, 2002)

Jordanian Government Web Portal: the e-Government portal intended to be launched in the year 2003 (McConnell International, 2001) was later not due to be launched until the year 2006. However, a new e-Government strategy was published in the year 2006 indicating that the portal is to be launched in mid 2006. The Portal again failed to be launched in the year 2006. Eventually the portal managed to go online by the start of the year 2007.

e-Health: the e-Health initiative was launched in the year 2000. Its goal was the connection of Al Basheer Hospital (the biggest public hospital in Jordan) with all other public hospitals in Jordan within a three year plan (McConnell International, 2001). Progress on the project was not published even when the Al Basheer Hospital website was accessed on February 2007. The website was not functional it had a one page display, with all internal links disabled.

e-Learning: is also another major ICT project in Jordan announced in the year 2001. It is managed by the Ministry of Educatio. The project came as an extension to the REACH and e-Government initiatives. The project is considered to be the second biggest ICT initiative in Jordan after e-Government. Despite extensive resources dedicated to the project, e-Learning similar to e-Government is failing to deliver any of its intended goals. One example is the e-learning portal www.learning.jo planned to be launched in the year 2005 delivering educational material and services to students (MoPC, 2002; ITA, 2003). However, up to this point in the year 2007 the portal simply does not exist on the World Wide Web.

7.7 Jordanian e-Government Projects Output

7.7.1 e-Government Failing to Achieve Goals and Credible Outputs

Dada (2006) explains that e-Government failure can be defined as the inability to reach its intended goals. Document analysis revealed that the Jordanian Government had not managed to meet any of its e-Initiatives targets. In the case of e-Government particularly the Government is struggling to achieve any credible output from the project. From the year 2000, the start of the project, until the year 2007 service delivery was at an informative level with government ministries and agencies having developed their own websites. Fast Track Projects which started in early 2002 with the purpose of implementing fast and effective e-Government projects in order to prove that e-Government works, have been far away from being capable of delivering services. Findings showed that not only e-Government in Jordan is facing implementation problems but also previous and current ICT initiatives proved to be problematic including NIS[18], REACH, e-Learning and e-Health.

7.7.2 MoICT Admitting Difficulties

The Minister of Information Communication Technology Eng., Omar Al-Kurdi, officially announced through an interview on April 2006 (JIC, 2006) that "**e-Government outputs did not meet the high expectation**". The minister explained that was because of "reasons out of the reach of the Ministry". The minister in his announcement referred to the 8 Fast Track Projects mentioning that they had been scheduled to be completed in three years time when implemented in 2002, adding this had not been achieved. The minister continued to explain, "The implementation of an e-Government project is a long term process that requires plenty of time and recourses, therefore the MoICT implemented a new strategy which will be submitted to the Prime Ministry on May 2006 to be re-assessed and approved". The minister by his announcement broke the culture of silence which has been surrounding the problems connected to the implementation of e-Government projects. He also closed the chapter of the Eight Fast Track Projects that have been modified and re-modified

[18] National Information System (NIS) is an ICT project implemented in Jordan in the early 90's to support knowledge management and create a complete database which will be like a warehouse for many government agencies, the project involved many governmental bodies and was never successful.

again and again(5 projects, 4 e-service projects) by the MoICT publications claiming to have achieved success stories and that projects were being adequately implemented. Minister Omer, who was new in his position handling his ministerial power on November 2005, apparently did not want to carry on with promises and success stories inherited from the previous Ministry leadership. It might be that also he did not want to be blamed for e-Government failures. Instead the Minister spoke in public declaring that the e-Government project had not met expectations.

More recently (Al Shahed, 2006) a Member of Parliament (MP) and former Prime Minister of Jordan, Abderaouf Rawabdeh, had sent a query to the government concerning the e-Government project. Rawabdeh's inquiry concerned "The e-Government project, what is its status, how much has been spent on it, how much has been achieved, how much delay has there been and who is responsible for the delay". The reply of the minister of MoICT appears to have confirmed Rawabdeh's insinuation that progress in the project is not adequate. In 2002, 41 million JD was spent on the project, 13 million in 2003, 26 million in 2004 and 45 million in 2005, adding up to about 125 million JDs (US $170 Million) over the period (the total debt of public universities is about 100 million JD). According to the minister of MoICT, the achievements are the completion of the second phase to introduce the interrelated electronic service package for the next three years. They are also working out the **strategies and standards** within the technical services project. There is a government directory project, the activation of the public communications center and the headquarters of the e-Government, twelve government agencies have been linked together and 7700 employees have been trained to use computers. The minister's answer also has a list of reasons for the tardiness in execution. These include the lack of technical expertise, the lack of relevant legislation and the low budget given to the project, among others. What was alarming about the minister of MoICT's answer was that government has been involved for more than 6 years in the e-Government project spending millions of dollars and still standardization of technologies and best strategies have not been worked out. e-Government seems no where near being able to get any government service or license through the Internet. e-Government outputs could be informative websites for most government agencies. Presumably, government agencies can exchange information easily over their network.

7.7.3 Jordanian Media Discrediting e-Government

Following the minister Omar Al-Kurdi's statement, a pessimistic argument surrounding the Jordanian e-Government started to appear in the official Jordanian newspapers. One article by Yousf Gatishan (2006) who is a high profile journalist, written in Al Dustour newspaper titled "**challenging the e-Government"** says, "e-Government will fail to achieve its goals with its new intended strategy not after 3 years from 2006 but also after 10 years time". He also brands e-Government as a failing project that failed to deliver a single service online, adding he is not convinced that an e-Government will replace the existing bureaucratic Government. More recently an article published in Al-Rai[19] Newspaper (Al-Rai, 2006) wondered where had the promise of e-Government vanished and would it in the future meet any of its intended goals.

[19] The most widely circulated Arabic daily newspaper in Jordan (JPF, 2001).

7.8 Problems with e-Government in Jordan

The following sections of the research will highlight strategic problems concerning the implementation and management of e-Government in Jordan, which have led to slow transformation and weak supply of services.

Problem Findings: The e-Government project is not a simple project that is adaptable by implementing ICT in the public sector departments, in addition to applying implementation strategies developed in leading developed countries. e-Government has cultural, organisational, political, social and technical complications attached to its implementation that vary depending on the country's profile. In the Jordanian case e-Government required a radical shift from the traditional, centralised and bureaucratic culture of public sector control to total reform in the public sector hierarchies along with citizen focused outputs. However, this extreme shift of the public sector way of work proved to be a complicated process that threw up many problems. Ciborra (2005) examined the development of the Fast Track Project of DVLD and highlighted many problems facing the Jordanian e-Government services

> "First, the existing platform and software will be hard to convert, we deal with a non-centralized architecture, with non-systematic updating of the local and central databases and mostly written in antiquated COBOL programs. The databases are not relational, hence it is cumbersome to run queries and give instructions. Overall, there is a low technical readiness and employees are not very computer literate. If the technical backwardness was expected, it came as a big surprise that the sheer number of "dependencies" of the services surpassed the planning targets of the analysis phase. What looked like a straightforward application turns out to be decomposed into over 130 services that need to be documented. The list of dependencies is also impressive (about 35) and casts a shadow on the easiness of implementation. In other words, having a driving and other type of transport or vehicle licence involves internal transactions with the Prime Ministry (specifically, the General Intelligence Department), The Public Security Department, the Chamber of Commerce, the Ministry of Exteriors, the Ministry of Industry and Trade, The Ministry of Health, the insurance companies, the local municipalities and so on. Of course, dependencies vary according to the product or service (public vehicles, trucks, buses, private vehicles, etc.)."…. "Also, the new system must reduce the transaction time between the DVLD and the various dependencies. If this is not achieved, the mere speeding up of the procedures internal to DVLD will not have a significant impact on the overall service delivery time (made of the internal time combined with the dependencies time). Finally, a basic requirement is the possibility of shuffling documents between departments electronically. This is difficult until the DVLD adopts the Electronic Transaction Law and its recommendations". (Ciborra, 2005)

This reflects the scale of problems facing the vertical transformation to what is to be a simple straight forward project recommended by MoICT to be a Fast Track Project.

Document analysis results revealed the main problems facing the implementation of the Jordanian e-Government, they are:

1-E-Government lacking adaptable strategy: Document analysis revealed that the Jordanian Government did not have a well defined strategy for implementing e-Government that responds to the country's and the people's needs. Instead e-Government has been implemented to achieve all possible goals from e-Government theory (i.e. cost saving, transparency, enhance EC, e-Democracy and other expected outputs from e-Government). Also there was no clear e-Government plan either for stages of transformation, or how to connect people and empower them. Even when government set up Fast Track Projects they were imported from leading countries without understanding what the characteristics of a Fast Track Project were. For example in the cases of the projects Motoring Services (DVLD) and Taxation and Social Security, government did not study those projects. Instead they assumed and took it for granted that they would be easily adopted because developed countries have been very successful in implementing them (i.e. in the Netherlands super pilot projects worked within a six month period). This has led to Fast Track Projects in Jordan even after five years of their implementation failing to deliver any credible outputs.

2-Lack of concentration: Government is launching many e-Initiatives at the same time including REACH, e-Government, e-Learning and many subprojects. This has led to a loss of concentration and focus of government on a specific initiative, bearing in mind that all introduced initiatives are completely new to the Jordanian Government and society. Another factor that has led to the confusion when implementing e-Government is the involvement of many international donors with little coordination if any between them. Donors usually have the upper-hand in choosing the necessary hardware and software requirements for any donated project. This leads to more complication of the existing systems which makes future required integration between systems difficult. Table 7.5 gives an indication of the involvement of many donors in financing e-Projects in Jordan.

Table 7. 5: External actors, sources of funding and aid projects. Ciborra & Navarra (2005)

External actors		Donors	Projects
Consulting firms	Deloitte & Touche, EDS	*Spanish government*	Hardware
Vendors	Helwett-Packard, Cisco Systems, Microsoft, Intel, Oracle	*Japanese government*	Technical assistance
Multilateral donor agencies	USAid, UN Development Programme	*British council*	System testing and quality assurance
Non-governmental organizations	AMIR	*World Bank*	Hardware, technical assistance, learning and resources centres
		Islamic Bank	Teacher training
		National Plan	Basic schools
		Cisco Systems	Teaching assistance

Ciborra & Navarra (2005) comments on the involvement of international donors in the Jordanian e-Government project by stating: "But if different platforms are donated to different Ministries in an incremental fashion the risk is not only to create the basis for future problems of incompatibility, but also to implement solutions that are not fit for the Jordanian Government agencies. The latter would be locked-in by high replacement costs, which would only benefit the suppliers of such systems".

3-Lack of ownership: The involvement of many donor parties in the project has led to the e-Government team, instead of being responsible for implementing, coordinating and monitoring e-Government, seeming to have at the moment the goal of coming up with new initiatives in order to convince international donors to invest in them. Ciborra & Navarra (2005) when interviewing a senior government official in relation to the development of e-Government projects in Jordan, was told by the official, **"It is difficult to find who is in charge"**. Not surprisingly until the end of 2006 almost all if not all governments around the world who implemented e-Government have had a Government portal which is an entry point for e-Government services and is an essential and the most basic requirement of a successful e-Government. Jordan up to late 2006 did not have a portal. Many other countries in the region who implemented e-Government after Jordan, such as Qatar, Dubai, Egypt and even Syria which did not have a clear e-Government agenda but started in the year 2005 to apply steps to achieve e-Government, have all had e-Government portals.

4- Failing to execute main enablers: Although the Jordanian Government has identified the REACH programme enablers in addition to required building blocks to successfully implement e-Government, the Government is not executing most of the recommended enablers. For example in relation to the Legal and Regulatory Framework Development which is an important enabler for e-Government transactions and integration, the government did not accomplish the required steps to ensure legal and regulatory aspects were implemented. The annual REACH follow up reports, REACH (2000; 2001; 2002; 2004), recommended each year the necessity of electronic transaction law, online authentication law, online payment laws, laws related with EC, in order to ensure an adequate development of the initiative, yet no necessary actions have been executed to ensure the implementation of Legal and Regulatory Framework (Ciborra, 2005; Al-Omari & Al-Omari, 2006).

5- Public sector existing structure and culture: The security procedures and the involvement of military based departments in plenty of government services makes the re-engineering process by integrating civic and military departments harder due to legal, security and cultural considerations, military based departments and key ministries will fiercely resist and not compromise through any integration with other civil public sector departments. Kulchitsky (2004) when reviewing the development of the National Information System (NIS) in Jordan stated: "Jordanian officials described the problems associated with unwillingness to share power, information between different agencies and the high competition between them as the "horrific atmosphere" of the early 1990s, when institutions refused to share and display information during the design and development of the NIS framework". More recently Ciborra (2005) when reviewing e-Government in Jordan indicated the existence of similar public sector cultural barriers facing the transformation of e-Government. Ciborra wonders if such a major transformation is possible, he states "The latter will imply a radical cultural transformation: moving from a rigid, control oriented management style to a process organization servicing the customer. Note that the transition is not from a public bureaucracy to a market organization (the concern of all the new public management literature) but from a military culture to a business/market culture".

6-Technical problems: Due to the scarcity of financial and technical recourses, in addition to government agencies resisting change to their systems and working methods, government agencies are building on existing systems to integrate them together. This situation of integrating different existing systems with newly implemented ones makes the automation of services a complex process. Ciborra (2005) when reviewing some of the Fast track projects in Jordan indicated this problem by stating:

"Jordanian public administration is not a green-field site as far as IT is concerned. Rather, over the years, each ministry, department and agency has been implementing a number of applications. All these efforts come to represent the "installed base" of existing systems and applications which any new e-Government initiative has to deal with. There are ministries or areas more advanced than others and a variety of infrastructures, often incompatible or plainly not integrated or networked. Thus, when considering the fast track projects, the one at Income Tax Department (ITD) is relatively more advanced, or ranks higher on the "technical readiness" scale. Scale in other services (e.g. sales tax) new systems have been introduced, This is a quotation, but the first half of this sentence doesn't appear to make sense. but due to lack of involvement and user participation, there is resistance to acceptance; the DLS uses a database that does not support spatial techniques and an upgrade is in order; these and others, are stand-alone systems. The analysts have found duplications, redundancy and low quality of data. Note that these negative aspects have been observed in connection with the already automated procedures and files, not in relation to manual ones."

7- Lack of IT expertise: There is a lack of Jordanian expertise especially in areas related to IT project management and risk management, also there is a shortage in many technical areas such as system developers, website developers, network experts (Kulchitsky, 2004) and this has led to the Jordanian Government in most cases consulting private sector firms for the implementation of e-Government projects. This process makes implementation more expensive in addition to private companies providing governments with solutions that they are able to provide, not the best solutions possible, which has led to the increase of the complexity of existing system in government agencies (Ciborra & Navarra, 2005).

The Jordanian e-Readiness report (McConnell International, 2001) mentions that Jordan has a respectable number of ICT related graduates who gain their degrees from the Jordanian universities each year, adding that the report considers this as a strength that will cover the need for IT expertise in Jordan. However, what is happening in Jordan is that expertise takes time to develop after graduation. Even when expertise is developed, those experts quickly leave the public sector to either work in the private

sector or seek out of the country opportunities, mainly the Arab Gulf and USA (Al-Jaghoub & Westrup, 2003) seeking better opportunities. That is because the average salary of a government employee is around 300 JD (approximately US $400), much lower than any other job in the private sector, which hinders staffing of IT professionals within the public sector (Ciborra & Navarra, 2005).

8- Government not understanding citizens and businesses needs: This is the main area of this research, it argues that e-Governments generally are is applying services and projects that it thinks is important for people without measuring and trying to understand citizens and business actual needs, this has been evident for the Jordanian case and will be highlighted in details in the following section of the research. One reason for this problem might be that government being concerned with apparent technical and managerial complications have led to the undermining of other problems that are not apparent, such as understating people's and business's needs.

7.9 Jordanian e-Government and Citizens

Using document analysis, this section of the research will investigate the supply side of e-Government in Jordan and if it is contributing to the gap between people and e-Government, by identify the following points:

1. People's position within announced e-Government strategy and plans.
2. The understanding of people's needs by the Jordanian Government.
3. Jordanian Government actions to respond to people's needs.
4. Problems attached to people and their needs.

7.9.1 Citizens Position within Announced e-Government Strategy

The Jordanian Government when it implemented e-Government had the vision of e-Government being a contributor to Jordan's economic and social development by providing access to e-Government services and information for everyone in the Kingdom irrespective of location, economic status, IT ability and education. e-Government would represent a major shift in the role of government towards a "client-focused" delivery of services, by the year 2005 (MoICT, 2006). The Jordanian Government used the term "Electronic Revolution" to describe the required development where citizens would be the centre and focus of the intended revolution. This announcement by the government could be described as over optimistic and challenging at that time (year 2000), taking into consideration that only around 1.5% of the total Jordanian population was using the Internet, in addition to there being only 1.39 PCs per hundred persons in Jordan (MoPC, 2002).

7.9.2 Customer Centric Strategy and Citizens' Needs

MoICT announced that the strategy of implementing e-Government in Jordan is "**Customer centric based on citizen needs**" (MoPC, 2002). However, at that time from a citizen perspective there was no need for e-Government, since the e-Society was not well developed. With regard to customer involvement and participation, methods have not been implemented in any way throughout the implementation of the e-Government project to determine if there is a need and what the requirements are

from e-Government. It has been noticed that the Jordanian Government is assuming that it is responding to people's needs and people are demanding e-Government services. An additional explanation for the strategy "Customer centric based on citizen needs" might be that a strategy will be implemented to satisfy citizens' access needs. This includes all issues related to accessing e-Government including ICT skills, personal computer ownership, Internet connectivity. Whatever way customer needs is interpreted, there is an indication that the Jordanian Government is assuming that people will use online service if they are capable of accessing the Internet. Ciborra & Navarra (2005) when reviewing the development of the Jordanian e-Government indicated that Jordan is somehow in the position of playing the role of the supplier and consumer of e-Government with this affecting the development of e-Government. They state "It is then uncanny that the government emerges as the sole actor in e-Government in terms of both demand and supply. This might be a first clue to suggest that 'e-Jordan' is not approaching the model of the neoclassical state". A clear example of government acting as the supplier and demander of e-Government is the statement found in the e-Government report (MoPC, 2002) stating:

> **"Business training**—Jordanian firms require training in the development of both IT systems and user applications. In order for companies to properly interface with e-Government on-line systems, some Jordanian firms might need to undergo business process reengineering, network planning, database design and systems development management training. A shortage exists of business and systems analysts. e-Government offers the opportunities to reengineer existing ways of doing business and business systems skills are required."

The statement reflects the complete lack of strategic thinking in assuming that businesses are willing to comply with ICT and change their existing processes to join the e-Government hype. Furthermore it shows lack of awareness of real customer's needs, in addition to the deep-seated top-down management culture influencing the understanding of e-Government implementation. The statement as well implies the lack of understanding of real challenges connected to the deployment of e-Government in both government and businesses.

7.9.3 Jordanian Citizens Access Capabilities

Jordan is a small country with a population of about 6 million, relatively landlocked, with few natural resources, highly urbanised and with a low GDP per capita of US

$4500. As figure 7.5 shows 89% of Jordanian families have a monthly income less than US $1000 and 51% of Jordanian families have an income less than US $600 (DOS, 1998). The average household size is 5.4 (DOS, 2004). This makes living standards for families very poor because of the low income and big family size.

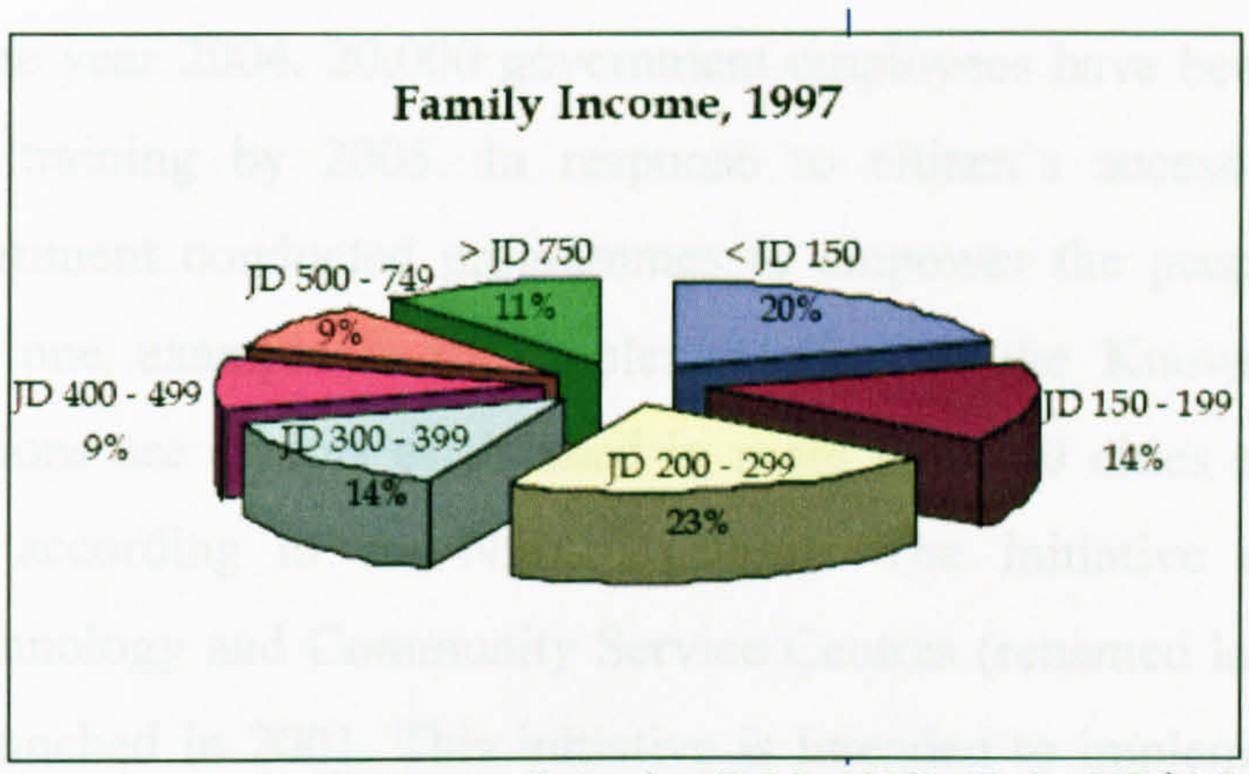


Figure 7. 5: Family Income in Jordan (DOS, 1998) JD 1 ≈ US $1.5

From the researcher's experience the cost of purchasing a PC (around US $700-1200) will be the whole monthly income if not more than that for most Jordanian families. Furthermore, connecting to the Internet is expensive in Jordan. In the Year 2001 unlimited dial-up Internet access cost was an average of US $60 in Jordan excluding the calling costs, compared to US $16 per month in Ireland and US $33 per month in Israel (MoPC, 2002), not forgetting the big difference in income rate between Jordan and the above mentioned countries (McConnell International, 2001; Ciborra & Navarra, 2005).

These statistics reflect the financial difficulty for most Jordanian families of purchasing a PC and connecting online, not forgetting most of the householders of the Jordanian families are not computer literate. In addition EC activities in Jordan are not well developed. All these factors make the process of buying a computer and connecting online undesirable for most Jordanians.

7.9.4 Actions by Government Responding to Citizens' Access Needs

Jordan as a country understood (in publications at least) the need for empowering people with IT skills and devices in order that e-Initiatives especially the e-

Government might be successful. In response the government conducted large training programmes intended for the public sector to provide the employees with the basic ICT education needed to use a PC and connect to the Internet. The ICDL is one of the main training programmes executed in Jordan. More than 7,000 teachers and supervisors all around Jordan had to attend training courses and successfully gained the license by the year 2004. 20,000 government employees have been scheduled to gain their ICT training by 2005. In response to citizen's access limitation the Jordanian Government conducted programmes to empower the people in the rural deprived areas; one example is the implementation of the Knowledge Stations. Knowledge Stations are centres established in more that 100 cities and villages all around Jordan, according to the NITC[20] (2006) "The Initiative of establishing Information Technology and Community Service Centres (renamed later Knowledge Stations) was launched in 2001. This initiative is intended to implement IT in local communities in remote areas in preparation for the e-Government process". When the websites of Knowledge Stations on (Knowledge Stations, 2006) are accessed, they claim to be achieving the following successes:

> "Since its inception, the various Knowledge Stations have trained a total of **72,987** people, [**53.2%** females and **46.8%** males], on basic computer literacy and other various advanced courses on how to utilize ICT towards enhancing their businesses, attaining health care information, **participating in e-Government,** acquiring novel leadership and entrepreneurship qualities and general awareness of the various social issues such as gender discrimination and child development."

Controversially e-Government at that stage was not delivering any kind of services online other than information. Health care systems are not available online and the Health Care Records Project has been limited by government from early 2002. Also people going to these centres attending courses are mainly illiterate, do not know any English language and do not have any business to use ICT in. Even if they had businesses ICT would not add any value to them since businesses in small Jordanian villages and cities are mainly simple businesses managed in the local culture style of the city or village. Other similar programmes aimed to increase the knowledge society

[20] NITC is the Jordanian National Information Technology Center is a Government body established in the year 2003 its main objective of the Centre is to participate in implementing the national strategy, plans and programs that are related to the deployment of information technology resources in government organizations and to establish and manage an integrated and comprehensive information system at the national level by linking the various organizations in the public sector to a national network.

has been the 'e-villages', working together with Cisco and UNIFEM[21], which aims to provide computer training and ICT awareness to women in rural ultimately seeking to bridge the digital divide between rural and urban areas.

Financial figures on intended e-Government spending between the years 2004 and 2006 reflect a huge gap of spending between tens of millions to be spent on enabling e-Service projects while only a small amount of hundreds of thousands of JDs have been allocated to projects aimed to promote Internet access and e-Business in Jordan. For example only 15,000 JD would be spent in the year 2004 (and after that abandoned) on the project called **"Wide Spread of Internet Services in Jordan"** (MoICT & MoPC, 2003).

7.9.5 Jordan Providing IT Training without Increasing Access

Jordan has been concentrating on making people computer skilled by providing different training initiatives across the country. However, Jordan did not concentrate on the process of making people acquire a PC and connect to the Internet which is the more important; even when implementing training programmes most of the targeted people to be trained were the least likely to buy a computer (Ciborra & Navarra, 2005). That is because the Jordanian Government is assuming that there is a digital divide problem and tackling it by adopting methods to deal with the problem implemented in the developed countries. This approach led to a slow increase in computer ownership and Internet users in Jordan. Table 7.6 presents the PC ownership and Internet growth in Jordan.

Table 7.6: ICT User Growth in Jordan. (DOS 2001;2002;2003;2004;2005, Dutta et al., 2004;2006)

Year	Internet Users (%)	PCs (%)	Mobile Phones (%)
2001	2.5	1.39	5.83
2002	3.9	2.1	8.18
2003	4.5	3.2	16.71
2004	5.7	3.75	22.89
2005	8.10	4.50	24.190

[21] UNIFEM is the women's fund at the United Nations. It provides financial and technical assistance to innovative programmes and strategies to foster women's empowerment and gender equality.

Added to that Jordanian society is not a technology friendly society compared with the UK, Taiwan, Singapore and Ireland; most of the employees are sociologically not comfortable with using the computer, they see the ICDL as an exam they must pass in order to sustain their job requirements by getting the certificate (Mofleh, 2006). Even if arguably employees wanted to gain advantage from their basic ICT training most of them could not afford to buy a PC and have an Internet connection. People in time will lose the basic skills they obtained, leading to most training programmes being a waste of time and effort.

7.10 Discussion

(Castells, 2000, p. 198) defines the state as developmental when "it establishes as its principle of legitimacy its ability to promote and sustain development, understanding by development the combination of steady high rates of economic growth and structural change in the economic system both domestically and in its relationship to the international economy". The pioneer for a state sustaining developmental status has been Japan which its approach was duplicated in various ways in countries like South Korea, Hong Kong and Singapore (Johnson, 1995). The Jordanian Government has launched many e-Initiatives from the start of the year 1999 motivated by its new young leadership (Kulchitsky, 2004). Jordan believed that one solution to develop the country and overcome its limited recourses was to join the Global Economy and promote sustainable human development by transforming Jordan into an e-Country. By deploying major ICT projects Jordan was aiming to change countries institute structure in addition to expand its international and local economic reach and integration (Al-Jaghoub & Westrup, 2003).

The REACH initiative has been the trigger for the start of promised e-Transformation with the promise of making Jordan a centre for ICT industry in the Middle East (Navarra, 2006). Document analysis demonstrated that the REACH initiative is transforming Jordan to an ICT consumer country rather than a producer or a developer. Following REACH Jordan started a new wave of ICT projects, the largest and most important have been e-Government and e-Learning. e-Government launched in the year 2001 with plenty of government optimism. However, when following the publications concerned with the progress of e-Government and its deployment, it was found that the Jordanian Nation did not have a solid strategy and plan for its deployment, in addition there was no understanding of the scale of change and effort needed to transform the Jordanian public sector. As well as this, Jordan set up short timescales (5 Years for REACH and e-Government) to achieve required goals for its e-Initiatives. Jordan often compares itself in the deployment of ICT based projects to Singapore (REACH 2000; Al-Jaghoub & Westrup, 2003). However in Singapore, one of the critical elements necessary to be able to jump-start and scale up quickly any ICT initiatives such as e-Government is the presence of a strong IT foundation. Singapore's solid foundation was established by the Civil Service Computerisation

programmes (CSCP). The CSCP was conceived in the early 1980s with the clear aim of transforming the Singapore government through the use of IT. Since its launch, the CSCP has progressively advanced and evolved with the changing technological, business and social climate, to bring about changes to the way the Singapore government serves the public (Lim & Low, 2003).

Researchers following e-Government development indicate that most of the developing countries implementing e-Government projects usually adopt strategies that do not fit those countries' requirement. One reason for this is because e-Government is externally driven by international development initiatives which have a key role in formulating its required outputs without realistically understanding the cultural and social needs of those countries (Stoltzfus, 2005). It is also the case that developing countries are technology driven in their implementation of e-Government and import strategies created for developed countries (Basu, 2004; Chen et al., 2005; 2006). This practice of importing inappropriate strategies delays the e-Transformation of developing countries by launching projects that are not responsive to either the government's or the people's needs (Pradhan, 2002; Huang, 2004; Zhang et al., 2005).

The Jordanian e-Readiness report conducted prior to the launch of e-Government in 2000 indicated that one of the major weaknesses of Jordan was the low internet penetration levels (no more than 2% of the total population) combined with weak e-Business atmosphere. Jordan announced its first e-Government strategy in 2001 to be customer-centric and had the vision of delivering electronic service to any person in the country irrespective of users' location and education in 4 years (MoPC, 2002). In 2005, Jordan was still far from delivering adequate high level online services in addition of not being successful in creating an outsized online society. In response to the unsatisfactory e-Government outputs Jordan launched a new three-year e-Government strategy in the year 2006 hoping to achieve a well effective e-Government by 2009. Both old and new e-Government strategies reflects that Jordan understands what is required to enable the e-Atmosphere and boost e-Government (MoICT ,2006). However, findings indicate that the government did not know how to transform identified requirements into manageable plans and projects that respond to the country and peoples' needs. The lack of a long-term realistic strategy that reflects

the country's capabilities and schedules Jordan's transformation in an acceptable time frame using discrete achievable stages reflecting people's needs, an indicator of this has been the delay in executing high priority e-Government enablers such as the essential laws that would enable and authenticate online transactions. The Jordanian project was so focused on the technical side, attempting to achieve integrative services, that it forgot other achievable levels of e-Government such as adequate informative and interactive services.

The absence of such a strategy and plans may be because Jordan was not originally involved in long term developmental initiatives, it lacked the expertise to assess and formulate a well structured achievable strategy compatible with the changes brought by e-Government. Other arguments questioning the absence of effective strategies was highlighted by Blakemore & Dutton (2003) who have created a comprehensive literature review on the various elements enacted by e-Government and other common ICT reform initiatives around the globe, paying particular concentration to Jordan's ICT initiatives and the attempts to produce an e-Society. They found that International Development Instantiations (IDAs) active in the lest developing countries (LDC)'s such as Jordan have a key position in the shaping of strategies and policies aims that LDCs are expected to achieve. However, created strategies and polices generally are designed in a way which reflects an unclear understanding of that culture and real needs of the developing country leading to the implementation of inadequate e-Government strategy, where in the case of Jordan the lack of adequate planning may have impacted the understanding of citizens real needs. While the government declared that e-Government has been initiated to respond to citizens' needs, with a citizen-centred strategy, the manifest implementation method of e-Government has been evident to be a top-down approach.

As a result e-Government performed extensive ICT programmes instead of targeting people who would be most likely to adopt e-Government and developing schemes that would increase their low internet penetration and introduce ICT to their social and commercial life style, ICT programs concentrated on rural areas of Jordan. The e-Government seems to take it for granted that the country already has a well-developed e-Society and it is solving an existing digital divide problem. However, in reality Jordan is just importing strategies that were created in developed countries where

such programmes are implemented in order to empower a minority of the society who are missing many of the benefits from existing online services and where such programmes help to achieve social equity (Lee-Kelley & Kolsaker, 2004). In a similar undertaking, the government has established extensive training programmes for government employees although no firm acts have been passed to integrate employees' working methods with ICT, for instance the introduction of Paper Elimination Act[22] in order to develop an ICT working culture. In time this may well lead to trained people in rural societies and public sector employees losing the basic IT skills that they have developed since they have not been able to use them. This has resulted in a small growth in the Jordanian e-Society.

The Jordanian Government is, to some extent, the sole player in terms of both demand and supply in the deployment of e-Government (Ciborra & Navarra, 2005). If e-Government continues to be deployed using this approach, the government will not be able to deliver usable services causing slow e-Transformation. However, the government is still trying to automate its existing complex procedures. If the government successfully delivers online services, there might be a low demand for them because of a widely held view amongst early users that "e-Government information is not worth the effort of finding, using or analysing" (Jaeger & Thompson, 2004).

[22] Government Paperwork Elimination Act. (GPEA) is relatively straightforward, requiring the Federal government to acquire and use "information technology, including alternative information technologies that provide for electronic submission, maintenance, or disclosure of information as a substitute for paper and for the use and acceptance of electronic signatures.

7.11 Summary

A document analysis in the chapter has been conducted to review Jordan's e-Initiatives implementation and how successful they have been. In addition the chapter focused on how was e-Government responsive to citizens. Results revealed that Jordan has been driven behind the e-Hype[23] when deploying the countries e-Initiatives, which might have turned Jordan into a consumer of ICT products rather that a producer. In particular e-Government faced a number of strategic and cultural problems that hindered any effective transformation.

In relation to citizens and their needs the Jordanian e-Government initiative is an example of such projects in developing countries that are inadequately responding to the service demand levels of the majority of their citizens since customer-centric strategies are usually copied from leading e-Government adopters. These strategies have not been designed to accommodate small less developed e-Societies. Also these strategies did not reflect the enormous level of change that e-Government transformation would bring into the public sector when compared with developed countries. This led to developing countries applying e-Government strategies and embarking on projects that did not respond to either the government's or the people's needs. This has created a struggling, unresponsive e-Government delivery.

[23] Electronic Hype (e-Hype): Is a term used in ICT literature to describe the wide spared of ICT based activities and expressions (e-Businesses, e-Government...etc.) during the last decade of the twentieth century.

Chapter 8

Examining the Actual Supply and Service Delivery of e-Government in Jordan

8.1 Introduction

The aim of this chapter is to measure the actual supply of e-Government in Jordan, this has been conducted by measuring e-Government presence on the World Wide Web and assessing its service usability. The first method of analysis used in the chapter has been basic online **visibility test** to measure the demand on e-Government in Jordan, following that a **stage analysis** have been conducted to identify the level of services delivered online to citizens, finally the main analysis in this chapter has been the **usability analysis** which is one type of website content analysis. Figure 8.1 shows this chapter flow.

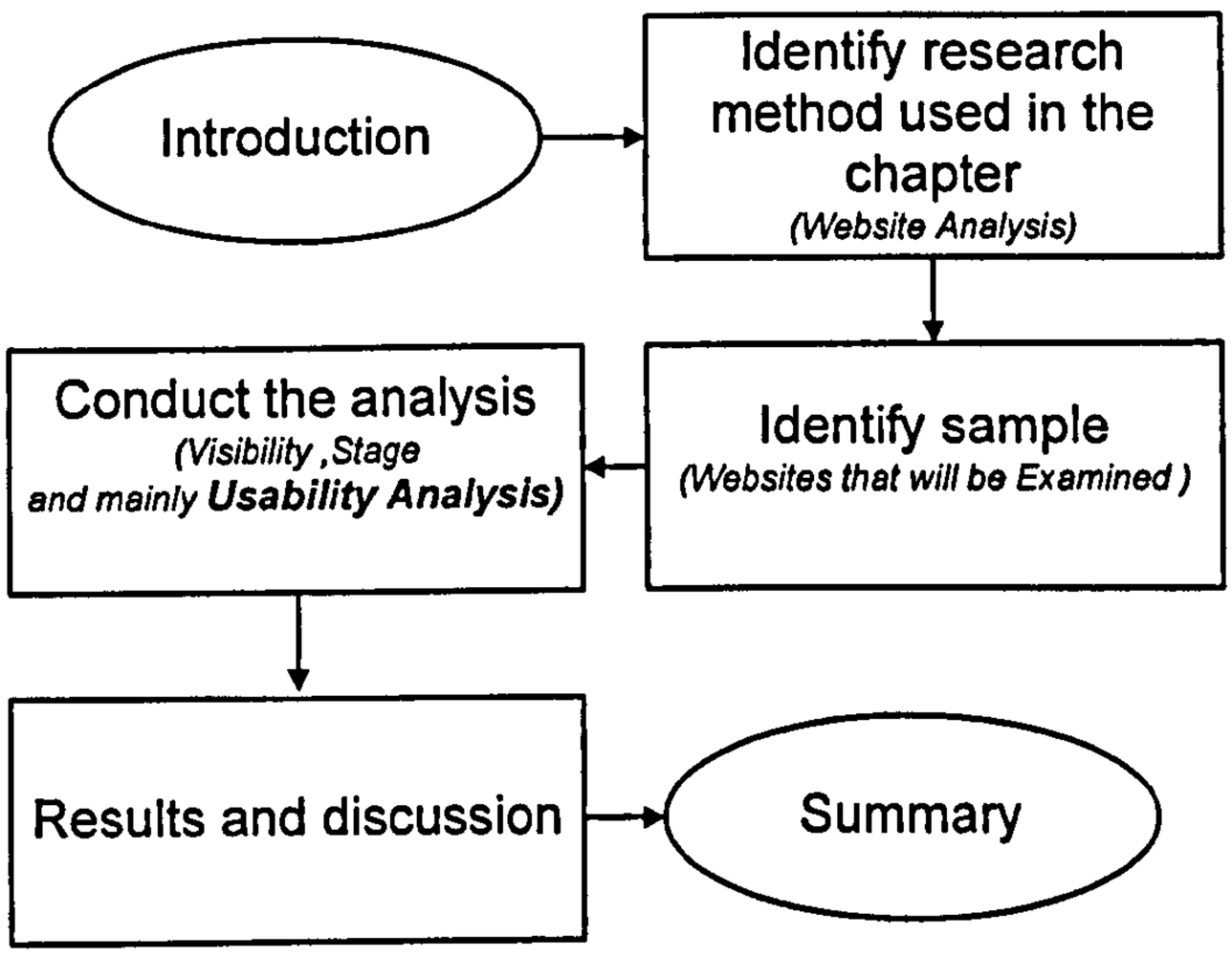


Figure 8.1: Chapter flow

Usability analysis will recognize if the Jordanian e-Government is providing people with added value services and information, as well as examining whether services are responding to people's needs. It will focus on 6 main areas within the governmental

websites. These are (a) online services, (b) user-help, (c) navigation d) legitimacy, (e) information architecture and (f) accessibility accommodations. Website analysis will also have the ability to identify managerial, technical and cultural problems related to the implementation of e-Government within Government agencies since the front gate of a government agency (Website) could reflect underlying problems in the back office of an agency responsible for delivering the service (Heeks & Bailur, 2007).

8.2 Content Analysis

Website content analysis is derived from content analysis, there are a number of existing definitions for content analysis, Berelson (1952) identifies content analysis as being a research technique for the objective, systematic and quantitative description of manifest content of communication. Stone et al., (1966) defines it as any research technique for making inferences by systematically and objectively identifying specified characteristics within text. Holsti (1969) describes content analysis as a research methodology "for making inferences by objectively and systematically identifying specified characteristics". Krippendorff (1980) defines content analysis as a research technique for making reflective and valid inferences from data to their content.

Despite the variety of definitions, content analysis implies the use of a set of procedures to inspect the presence and absence of particular words, themes, features, within a set of texts to explain and clarify specifics about the message sender. Texts can be broadly defined to include books, book chapters, essays, interviews, discussions, newspaper headlines and articles, historical documents, speeches, conversations, advertising, theatres, informal conversation, or really any occurrence of communicative language (Gottschalk et al., 1997). Babbie (1999) finds that "content analysis methods may be applied to virtually any form of communication". Website content analysis involves using the websites as a source of texts to be analysed, this leads to the conclusion that website analysis is mainly one type of content analysis. There are two main types of content analysis. These are:

1- Conceptual analysis: investigate the existence and frequency of concepts in a text.

2- Relational analysis: builds on conceptual analysis by examining the relationships among concepts in a text.

8.2.1 Website Content Analysis

In the literature relating to e-Government that has been reviewed, website content analysis has been widely used to address the research questions posed and test hypotheses (Babbie, 1999; Hodder, 2000; Leedy & Ormrod, 2001; McNabb, 2002; Ryan & Bernard, 2000). For this research conceptual analysis will be used to measure the existence and absence of particular variables in websites to identify government websites usability, it will identify the level of e-Government maturity (Stage Analysis), as well as examining the update of the website (regular visits). All of these will be an indication of Jordan's approach and progress in executing its e-Government Project.

8.2.2 Advantages and Disadvantages of Website Analysis

Similar to any research method website analysis has its advantages and disadvantages. The two major advantages of website content analysis are:

1- It provides a simple, clear and easily repeatable format. Furthermore, it gives a structured methodology for quantifying the contents of a qualitative or interpretive analysis (McNabb, 2002).
2- It is unobtrusive (Babbie, 1999). Content analysis has no effect on the unit of analysis while the assessment is taking place. Also the person conducting the research is anonymous; he accesses the website without the people responsible for the website knowing it.

The main disadvantages of website content analysis are:

1- Content analysis constrains the assessment to what are viewable variables of a selected website (Babbie, 1999). This means the rationale behind manifest content is not considered. However, in some cases rationale analysis could be executed on conceptual analysis to over come this limitation.

2- There can be a built-in bias when isolating items of information from their context (McNabb, 2002).The result of this for e-Government website usability research is that the overall response that a user has to a website may not be captured. This could be predominantly true for a first time guest to a website. For example, the first time visitor may be pleasantly surprised that a website exists and the website holds some utility for the visitor. This may result in a favourable overall user response even though the website does not rate well in an analysis of website usability variables.

8.2.3 Content Analysis Validity

In order to increase content analysis validity Nachimias & Nachimias (1981) suggests a critical step in content analysis by developing categories, which are both relevant to the purpose of the research and clearly defined. Bengston & Fan (1999) emphasises that categories are considered valid if they measure the definition that the researcher wanted to measure. Other scholars indicated three requirements for content categories to achieve the highest levels of content analysis reliability and validity they arm content categories being appropriate, exhaustive and mutually exclusive. Where content categories can be appropriate by having a clear definition that effectively presents the categories, exhaustiveness and exclusivity can be achieved if content categories contain all aspects relevant to the subject of the study and it is ensured that each item is addressed in only one area within the groups of categories respectively (Nachimias & Nachimias, 1981). Budd et al., (1967) suggest adding some limited miscellaneous comment category to help achieve an exhaustive analysis. In the case of this research all tools used to conduct content analysis have been obtained from published e-Government literature and research that insured that tools have been clearly defined in addition to being designed to have high reliability and validity standards.

8.2.4 Choosing the Sample

All ministries in Jordan have an essential role in delivering services directly to citizens and business. Each ministry is directly responsible for the delivery of tens and some times hundreds of services. e-Government implies the delivery of government

services online. In Jordan the project is implemented within all Jordanian ministries and administered by the MoICT. All Jordanian ministries had established their websites by January 2001. Table 8.1 presents the Jordanian Government online presence in the year 2001 compared with other countries in the region.

Table 8.1: Websites Presence in Mediterranean Countries – January 2001. Saidi & Yared (2004)

	Primary and Secondary Schools	High Schools and Universities	National Ministries	Regional and Local Authorities	Hospitals and Clinics	Museums	Libraries
Algeria	0%	28%	47%	33%	1%	31%	3%
Cyprus	6%	38%	100%	n.a	8%	11%	1%
Egypt	1%	7%	38%	n.a	0%	8%	6%
Israel	17%	85%	91%	99%	52%	24%	5%
Jordan	0%	22%	100%	0%	7%	0%	0%
Lebanon	3%	74%	73%	12%	8%	75%	40%
Malta	6%	4%	35%	21%	20%	21%	2%
Morocco	0%	75%	136%	1%	25%	n.a	n.a
Palestine	0%	36%	29%	8%	4%	0%	6%
Syria	0%	25%	35%	0%	0%	0%	0%
Tunisia	1%	33%	95%	0%	0%	60%	0%
Turkey	1%	100%	100%	4%	6%	30%	8%
Average	**3%**	**44%**	**73%**	**18%**	**11%**	**24%**	**7%**

Therefore website content analysis will be implemented for all 24 Jordanian ministries. In addition to ministries going online, the Jordanian Government was originally involved in 8 fast track projects established in the first quarter of the year 2002, two of those which have been dedicated for citizen services had websites. These are:

- **Income and Sales Tax Department** (Taxation and Social Security)
- **The Department of Land and survey** (Real Estate Services)

The analysis of the 2 fast track projects is significant because they represent the core concentration of the Jordanian e-Government project, given that they have been initially established to be a successful example of e-Government implementation. By May 2006 a number of Jordanian municipalities had websites, municipalities of the four biggest Jordanian cities Amman, Zarqa, Irbid and Salt have been chosen to be analysed since the largest cities' websites are expected to be the more advanced ones with regards to service delivery (Ho, 2002).

In total 30 government websites (shown in appendix 5) have been analysed, they were divided in three categories:

- 24 websites of all Jordanian ministries.
- 2 websites representing the Fast Track Projects directed to citizens.
- 4 websites representing biggest municipalities in Jordan.

8.2.5 The Purpose of Website Content Analysis

All analysis has been conducted from the period between the first of June until the first of September (01/06-01/09/) of the year 2006. Website content analysis will measure the actual supply side of e-Government services by identifying the following points:

- Determining the level of development of the Jordanian e-Government.
- Measuring the effectiveness of online delivery of government website.
- Determining if e-Government is meeting people's needs.
- Reflecting the overall Jordanian understanding of e-Government.
- Highlighting different cultural, managerial and technical problems within government agencies.

8.3 Visibility Analysis

Prior to conducting the website content analysis, using the Internet, a visibility analysis was conducted to investigate the Jordanian e-Government Internet activity. From the level of visibility it will be possible to evaluate the current usage of e-Government websites in Jordan and it will also reflect the actual demand and consumption on government websites. Kaaya (2003) refers to the visibility analysis as being an "important initial indicator of e-Government implementation".

8.3.1 The Method

As well as using Holliday's (2002) and Kaaya's (2003) approach, visibility analysis has also been recommended and described by Heeks (2006). Simple visibility tests can be undertaken by calculating what will appear in the first search engine entries when typing in "Country government". In the case of this research the term "Jordan Government" has been entered into three powerful search engines - Google, MSN and Netscape. "Jordan Government" was entered 2 times using Arabic and English languages.

- The Arabic search will reflect the demand on Government websites from the majority of non English speakers in Jordan.
- The English search will reflect the demand on Government websites from English speakers who are in most cases more educated and are more likely to represent the e-Society in Jordan.

Calculating visibility is performed by scaling the search results of the search engine into 10 different scores from (100-10%). If when searching the term "Jordan Government" a government website appeared as the first result then it has scored 100%, if it came second on the search engine it will have scored 90%, if it came tenth it will have scored 10%. If any government website did not appear in the first 10 results it will have scored zero. The average of the three search engines results is calculated to determine the final score. This is because search engines usually return results according to what is the most relevant and most accessed page related to the phrase that has been entered into the search engine. In addition to examining Jordan's

e-Government visibility, the government of Qatar and Dubai's visibility was tested is both languages, Arabic and English. This will compare Jordan's government visibility with other Arab governments which have implemented an e-Government initiative.

8.3.2 Results

Results of the visibility analysis of government websites in the English language are displayed in table 8.2 and the visibility of government websites in the Arabic language are displayed in table 8.3.

Table 8.2: Visibility Analysis Results (English Language Search)

Government Search in English				
	Google	**MSN**	**Netscape**	**Average**
Jordan	30%	0%	40%	33%
Qatar	100%	100%	100%	100%
Dubai	100%	100%	100%	100%

Table 8. 3: Visibility Analysis Results (Arabic Language Search)

Government Search in Arabic				
	Google	**MSN**	**Netscape**	**Average**
Jordan	0%	0%	0%	0%
Qatar	100%	100%	100%	100%
Dubai	100%	100%	100%	100%

The Jordanian e-Government scored a total score of 33% visibility in the English language and zero percent in the Arabic language. This suggests that there is a very low demand and usage of government websites within the Jordanian population. However, usage increases among English language speakers. Comparing the Jordanian case with other Arab countries that have initiated their e-Governments following Jordan and have much smaller populations than Jordan, Qatar and Dubai are 100% visible for both English and Arabic language speakers.

8.4 Stage Analysis

Previously discussed in Chapter 4 the development of e-Government has been divided into different stages (Hiller & Belanger, 2001; Layne & Lee, 2001; Moon, 2002; Reddick, 2004). In the generic e-Government model presented in this research e-Government development has been classified into four major stages 1) Web presence 2) Interaction 3) Transaction 4) Integration.

The first type of websites content analysis will be **stage analysis,** it is a simple measure that will determine at which stage of service delivery a government website is functioning and this will reflect the development of the e-Government project across governmental agencies in Jordan. Stage analysis has been used by the UN e-Government reports (UN/ASPA, 2002; UN, 2003; UNPAN, 2004; 2005) in addition to other researchers (Kaaya, 2003; Peters et al., 2004) to determine the level of e-Government development across countries. Gupta & Jana (2003) include stage analysis method as a soft measure in their proposed e-Government evaluation framework.

In this research all 30 government websites included in the sample have been examined. Throughout visits services provided by websites have been examined to find out what is the highest level of service possible. The highest level of service possible will be the stage in which the government website is categorised.

8.4.1 Results

It was noticed that Government websites are mainly in the informative stage. There has been some level of interaction services achieved in some agencies, this included document and application form downloads. Nevertheless, these interactions do not reflect real interactive services where an employee in a government agency interacts with e-Government users by answering an inquiry by e-mail, or having an online discussion board. Instead interaction is conducted between citizen and website at a very basic level. Table 8.4 summarises the results.

Table 8.4: Stage Analysis Results

Government Website	Stage Level
1. Prime Ministry and Ministry of Defence	Mainly informative, some low level of interaction (document download)
2. Ministry of Finance.	Mainly informative, some low level of interaction (document download)
3. Ministry of Foreign affairs	Mainly informative, some low level of interaction (document download)
4. Ministry of Municipal Affairs	No Website
5. Minister of Interior	Informative
6. Ministry of Public Works and Housing	Informative
7. Ministry of Education and Higher Education and Scientific Research	Mainly informative, some low level of interaction
8. Ministry of Justice	Disabled (No Website)
9. Ministry of Energy and Mineral Resources	Low level informative (Very poor interface + only English language)
10. Mini stry of Health	Low level informative
11. Mini stry of Transport	Mainly informative, some low level of interaction (Application form).
12. Mini stry of Industry and Commerce	Mainly informative, some low level of interaction (Ownership search, registry search ,document download)
13. Mini stry of Planning and International Cooperation	Informative
14. Mini stry of Environment	Mainly Informative
15. Mini stry of Labour	Mainly informative, some Low level of interaction (Application form)
16. Mini stry of Developing Public Sector.	Informative
17. Mini stry of Awqaf and Islamic Affairs.	Informative
18. Mini stry of Water and Irrigation.	Informative
19. Mini stry of Agriculture.	Mainly Informative, some low level of interaction (document download)
20. Mini stry of Culture	Informative
21. Mini stry of Political Development and Ministry of Parliamentary Affairs	Informative
22. Mini ster of Social Development.	Informative
23. Mini stry of Tourism and Antiquities	Informative
24. Mini stry of Telecommunications and Information Technology	Mainly Informative, some low level of interaction (document download)
25. Inco me and Sales Tax Department	Informative
26. The Departme nt of Land and survey.	Mainly informative, some low level of interaction
27. Mun icipality of Amman	Mainly informative, some low level of interaction (car fine information)
28. M unicipality of Zarqa	Informative
29. Mun icipality of Irbid	Informative
30. Mun icipality of Salt	Informative

The only significant service found within the analysed sample has been delivered by the Department of Land and Survey (DLS) service, enabling the user to update the information concerning land ownership online. To be able to do this, the service user was asked to register online, enter the details of the land, enter his e-Mail, contact

details and his National Number[24], after that the user was asked to enter the new details of the ownership along with contacts of the new land owner. The update of information then had to await approval from the department. The service did not provide any notable security measure which is very important since the Jordanian society is sensitive towards land ownership certificates from the researcher personal experience there have been some cases of land fraud sale in the past years. Also many online interaction and transaction laws have not been at this time legitimatised which increases the risks of making such services available online. Practically the service did not provide any added value to the user, since in the real world information can only be updated if the owner or any authorised person goes in person to the DLS. The Municipality of Amman provided a level of interactive service by enabling citizens to get information about fines on their cars, a similar service, however, was provided before implementing e-Government through an automated call centre and also this service breaches privacy standards since the user can obtain information about fines issued for any car in Jordan by providing the car plate number. The findings of stage analysis are similar to the results found by the UN "Global e-Government Readiness Report" UNPAN (2004; 2005) presented in table 8.5. The UN report divided the stage development or what is called website presence of Governments around the world into 5 stages (emerging, enhanced, interactive, transactional and networked).

Table 8.5: UN Stage Analysis

	Emerging I	**Enhanced II**	**Interactive III**	**Transactional IV**	**Networked V**	**TOTAL**
Jordan (2005)	88	62	58	0	6	41
Jordan (2004)	88	49	46	0	2	33

Source: UNPAN (2004; 2005)

UN reports classified Jordan within a category called **Lowest Scoring Countries** for website presence. Jordan scored the highest points in the emerging stage which is equivalent to the informative stage, also Jordan had achieved some level of basic interactivity. However the UN results gave Jordan a satisfactory score for interactivity. In the findings for this research Jordan achieved a very low score for

[24] National Number: Is a unique number given for each citizen in Jordan. Most of the personal official documents and services require this number.

interactivity. This might be because the UN based the scoring on what is apparent from the title of the service, for example the Municipality of Amman website provided the service of applying for a licence online. However, when using the service and after finishing entering the necessary information a message would appear stating that the municipality of Amman will contact the applicant within 2 weeks to inform him about the requisite documents needed for his licence. This indicated that although many services appear to be transactional they are in fact informative or low interactive.

8.5 Usability Analysis

The main analysis in this chapter is the website usability analysis. The method has been widely adopted in e-Government literature and research (Nielsen, 2000; Pearrow, 2000; Gant et al., 2002; Nielsen & Tahir, 2002; Brinck et al., 2002; Stowers, 2002; Holzer & Kim, 2003; Miller, 2003; West, 2002, 2003, 2004, 2005). The method itself has been imported from literature which studied private sector website usability and quality for EC applications (Psoinos & Smithson, 1999; Barnes & Vidgen, 2000). e-Government website usability analysis is defined by Baker (2004) as "a qualitative measure of the relative ease with which a novice user interacts with an e-Government website to accomplish the user's goal". The level of usability of the website reflects the easiness of its design to meet with different citizens' abilities and skills to consume available services online. In this research government website usability results will be an indication of the level of commitment from government to serve and respond to people's needs.

8.5.1 Choosing the Appropriate Website Usability Analysis Method

Many tools have been found in e-Government literature that measured website usability. These tools measure several dimensions within a governmental website, with each dimension having a number of variable, dimensions are measured by summing up the accumulated scores of their intended variables and by summing up the dimension scores the website usability result will be generated. Although most of the tools in the literature are similar in concept as well as all having been constructed based on the same logic, variations have been evident, with no standardised agreement on the tools. In the case of this research the tool chosen to measure Jordanian e-Government usability has been developed by Baker (2004).

8.5.2 Baker's Website Usability Instrument

The significance of Baker's tool which was presented in his published research "e-Government: Website Usability of the Most Populas Counties" is that it recognizes that there is no universal agreement among existing e-Government studies regarding a common usability measurement tool. Baker used triangulation (Leedy & Ormrod, 2001) to establish his usability analysis tool commonality based on the review of six

existing e-Government website usability studies (Gant et al., 2002; Holzer & Kim, 2003; Stowers, 2002; West, 2003, 2003b and 2003c). The website usability variables recognized in at least four of the six studies (appear in 67% of the studies) earn the statues of **"common"** variable which have been organized into six dimensions of an e-Government website usability: these dimensions are (a) online services, (b) user-help, (c) navigation d) legitimacy, (e) information architecture and (f) accessibility accommodations. Figure 8.2 shows website usability dimensions.

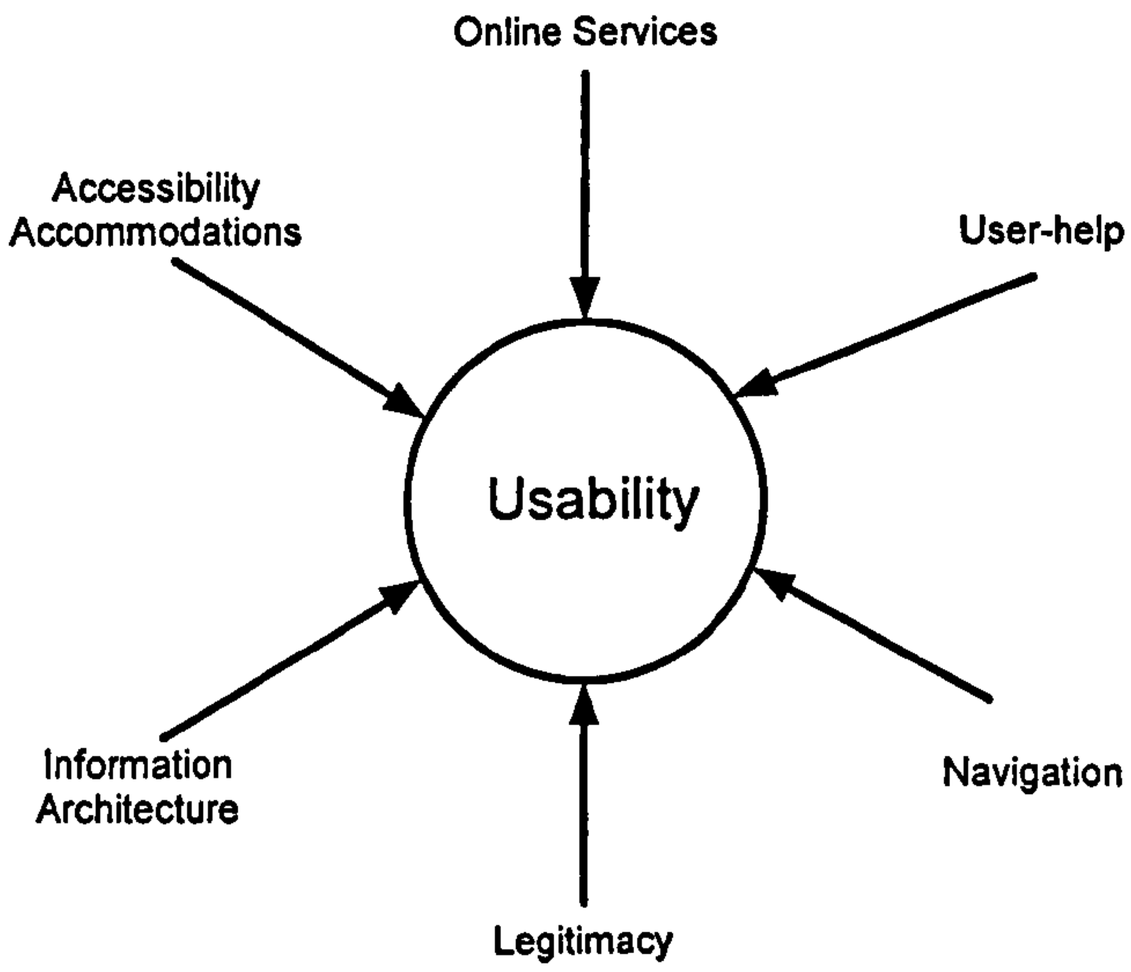


Figure 8.2: Website Usability Dimensions. Baker (2004) p 92

Each of the six dimensions has a similar maximum weight of 16.7 contributing to the final score of 100%. Table 8.6 shows the weight of each dimension contributing to the final score.

Table 8. 6: Usability Dimensions Weight Score

Dimension	Weighted Score
Online services	16.7
User-help	16.7
Negative	16.7
Legitimacy	16.7
Information architecture	16.7
Accessibility accommodations	16.7
Total	100%

Table 8.7 presents the six dimensions with their definitions in addition to all variables of each dimension. Appendix 5 at the end of this research gives the conceptual and operational definition of each dimension. It also gives the conceptual

and operational definitions for each variable in addition to showing the data collection tool which details the scores for each variable contributing to each dimension's final score.

Table 8.7: Usability Dimensions Definitions and Variables

Dimension	Definition	Variables
Online services	Online services refer to providing something needed or desired from a governmental entity to citizens, businesses, or other governmental entities by contacting an e-government website online.	•Basic Information •Communications with officials • Documents /publications •Downloadable forms •E-commerce applications •Interactive forms •Interactive databases •Multimedia applications •Chat areas/message boards •E-mail updates/ List serve •Employment information
User-help	User-help refers to tools, or mechanisms that facilitate satisfactory website electronic contact and interaction.	•About the site •E-mail us •Feedback •Foreign language •Search •Personal digital assistance •Index
Navigation	Navigation features relate to aids specifically designed to allow the user to steer though websites readily.	•e-Government services •Link to other agencies •Link to contact information •Chat areas/message boards
Information Architecture	Information architecture refers to devices that illustrate the structure, or organization and presentation of a website.	•Audience/market •Agencies/departments •Personalized/customizable •Services •Branch of government •Branding /structure /metaphor
Legitimacy	Legitimacy characteristics refer to features that reassure users that a particular website is authentic and ready to conduct service transactions.	•Contact information •Disclaimer statements •Privacy policy •Security policy •Authentication(PW /digital sign) •Webmaster contact
Accessibility Accommodation	Accessibility accommodations refer to mechanisms that address the needs of the disabled.	•Bobby compliance •Text telephone

8.5.3 Reasons for Choosing Baker's Websites Usability Method

The strong points behind choosing Baker's method for measuring website usability are:

1. Baker developed the tool to measure e-Government websites usability in American counties in order to determine if governmental websites are appealing to citizens' capabilities, such as limited ICT experience and skills. This provides an excellent tool to measure how the Jordanian Government is responding to people's needs.
2. The tool measures different dimensions within the same government website, consequently a government website may score well in user-help but on the other hand score very low on legitimacy and information architecture, this separation will provide improved analytical overview.
3. The method is an output of six previous website usability tools developed by e-Government researchers, furthermore variables measuring dimensions appear at least 4 times in the six previous studies and this increases the validity and reliability of the tool.

8.5.4 Slight Changes on Baker's Tool

Slight changes have been made to Baker's tool specifically on the language variable measuring the user help dimension. Baker gave a score of 1 for a website being in 2 languages, 2 in three languages, 3 in four languages and, 4 for more than four languages. In the case of Jordan there is not a cultural and lingual diversity as in some parts of the USA where Spanish, French, Portuguese and other languages are widely spoken. In the Jordanian population Arabic is the first language followed by English. The language variable score has been changed to 4 if both Arabic and English are included and zero for only one language.

8.5.5 Running Pilot Analysis

Prior to the start of gathering data using the instrument developed by Baker, a pilot demonstration has been conducted on the top ten scoring counties' websites researched by Baker (2004) and results have been compared with those found by Baker. Some of Baker's results scored slightly less than the pilot findings. The reason for this is probably because Baker's analysis was conducted in the year 2004 and data for our pilot demonstration has been collected in the year 2006 so some improvements will have been executed on piloted websites.

8.5.6 Data Gathering

Measuring and giving scores for the different variables in the different dimensions of the evaluated sample has been based on Bakers (2004) instrument with slight adjustments on it. Data was gathered and analysed in the period between June and September 2006. All 30 websites for the chosen sample have been regularly visited to give scores for all 34 variables that measure 6 distinct dimensions of website usability. Each of the six dimensions has been studied one at the time for the entire sample starting with online services.

8.5.7 Expected Results

The Jordanian Government websites were expected to score low results for usability compared with the 30 most populous American county websites analysed by Baker (2004). This is because government stage analysis conducted on the Jordanian Government websites indicated that the Jordanian Government websites are still in the informative level. This means that the online-services dimension will score very low affecting other related dimensions such as legitimacy and in total decreasing the score of website usability. In addition to that document analysis in the previous chapter revealed the lack of understanding of e-Government and its complications among government agencies indicating that government agencies are completely failing to integrate. Therefore it is expected that complications and misunderstanding of e-Government will be reflected in government agencies' websites usability.

8.6 Website Usability Analysis Results:

8.6.1 Overview

As expected the usability of Jordanian Government websites has scored extremely low results. Table 8.8 summarises the mean results for all dimensions of the three categories of the sample, government ministries, department and municipalities. In addition the table includes the mean results of the 30 most populous American county websites calculated by Baker (2004). Figure 8.3 shows the accumulative

mean results for dimensions. Detailed total scores are shown in appendix 6 at the end of this research.

Table 8.8: Jordanian Websites Usability Results

	OS Mean 16.7%	UH Mean 16.7%	N Mean 16.7%	IA Mean 16.7%	L Mean 16.7%	AA Mean 16.7%	Total Mean 100%
Jordanian Ministries	3.3	6.3	6.5	5	2.4	3.6	26.8
Government Department	6.45	6	6.1	9.1	4.2	3.3	35.1
Municipalities	3.7	5	6.8	4.5	1.4	3.3	24.9
Baker (2004) American County Analysis	13.7	10.2	13.3	9.5	11.7	13.3	71.7

OS= Online Service **UH**= User Help **N**= Navigation **L**= Legitimacy **IA**= Information Architecture **AA**= Accessibility Accommodations

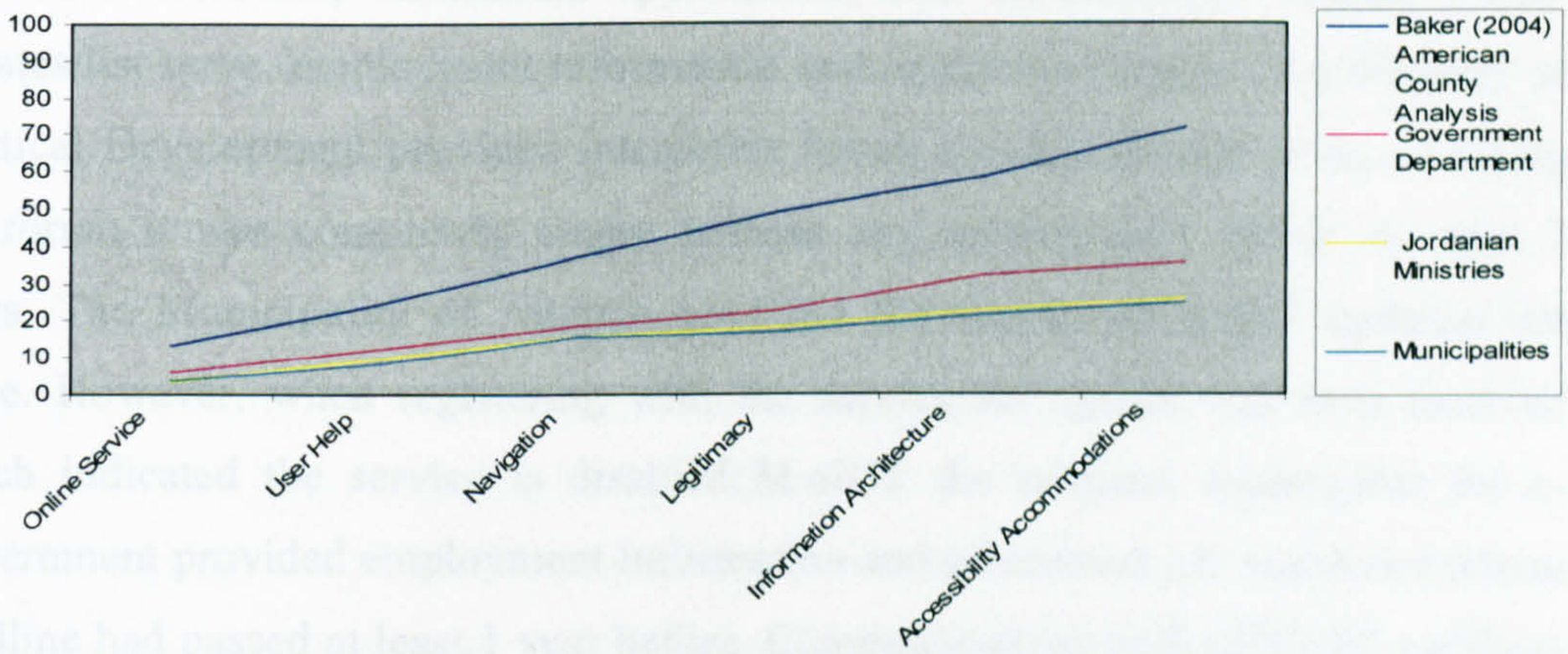


Figure 8.3: Jordanian Websites Accumulative Usability Results

Results reveal that there is a huge difference in the score between the Jordanian Government's websites and the 30 most populous American county websites. The Usability Index (UI), which is the sum of all six dimensions for government ministries, varied from a poor 5.3 to a maximum 39.3 out of a possible 100 with a mean of 26.8. Governmental department UI varied from 28.2 to 41.9 and the mean was 35.1. Finally the largest four municipalities in Jordan UI scored 14.8 to 41.9 with an average of 24.9. However, Bakers (2004) UI analysis for the 30 largest American cities scored from 45.2 to 85.3 with a mean of 69.4. Overall results reflect the poor

usability of different Jordanian Government websites. Only two governmental websites managed to achieve UI of a score just over 40%. These have been the municipality of Amman and the DLS, with most websites scoring in the range of 20-30%.

8.6.2 Online Services

The Jordanian Government websites that were analysed scored very low in the online services dimension with government ministries scoring an average of 3.3 out of a possible 16.67. Government departments scored 6.45 and municipalities 3.7, see appendix 6 for details. Most websites scored points for the variables of providing basic information, documents publications and downloadable forms. However, none of the governmental web sites included any EC applications. From all the 30 websites analysed, only one website provided one of the following variables: interactive databases, multimedia applications, chat areas/message boards, e-mail updates/list serve, employment information and interactive forums. The Ministry of Political Development provided interactive forum service, though when accessing the forum it was completely empty without any participation within the past 2 years. The Municipality of Amman provided the service of e-mail updates/ list serve. However, when registering with the service no update was ever received which indicated the service is disabled. M oICT the ministry responsible for e-Government provided employment information and advertised job vacancies whose deadline had passed at least 1 year before. Communications with officials' variables was provided on a limited scale and found only in the Ministry of Industry and Trade. All other analysed websites did not have this variable. The lack of communications with officials indicates the low involvement of employees in the public sector in e-Government transformation and services. Also it indicates that there is no integration between online delivered service and the real time service.

Findings indicate the low level of service delivery of the Jordanian Government websites, services mainly concentrated on providing information and publications related to government agencies. Some websites provided application forms for a number of services. Such application forms do not have any added value if citizens do not have access to a printer and therefore can not print out the form and use it.

Another important issue is that the mail system is not active in Jordan compared with the UK or the USA. Jordan uses a P.O Box system where post will be delivered to main storage centres and the citizen goes to collect his post from centres. From the researchers experience post is not widely adopted by the Jordanian population for domestic dealings in addition no government service is conducted by sending applications by post. Evidently the Jordanian Government is copying service delivery methods applied by advanced countries with the belief they are adding value to citizens. Nevertheless, in practice the available communication infrastructure (post) in the developed countries such as the UK integrates with online available service to add value for citizens. In the case of Jordan even if the citizen gets the application form he must visit a government agency to complete the service or application.

8.6.3 User-Help

The user help dimension scored slightly better than the online service dimension for most government websites with government ministries scoring an average of 6.3, government departments 6 and municipalities 5, out of a possible 16.7. Variables about the site, e-mail us and search have been found in most government websites. Findings regarding the foreign language variable indicated that most government websites offered both Arabic and English language with some websites only offering English language. This disturbing finding reflects the lack of basic understanding of the purpose of e-Government. While governments around the world are concerned about language and its contribution to the digital divide and in addition governments are responding by the introduction of new languages to government websites to meet with some minority group needs (McCaffery, 2003), in Jordan some government agencies are contributing to widen the divide by providing government website with only the English language. Examples include the website of the Ministry of Energy and Mineral Resources and The Ministry of Tourism and Antiquities. The Ministry of Tourism and Antiquities which provided headlines in Arabic and details in English, is yet another indication of the evident misunderstanding of e-Government and the purpose of online services of meeting people's needs. This is because around 70% of Jordanian tourism is based on Arabs (The Middle East, 2005) mostly from the Arab Gulf who generally do not speak the English language. Instead of targeting the

majority of tourists the Ministry of tourism website is ignoring them. Another example of the language problem has been found in the Jerash Festival website included in The Ministry of Tourism and Antiquities. The festival is the biggest cultural and musical festival in Jordan and all of its activities are in the Arabic language, strangely its website was found to use the English language only. Feedback variable has been found in some government agencies' websites with no type of conformation method for receiving feedback. Personal digital assistance, Index, has been not found in any Jordanian Government websites.

8.6.4 Navigation

Navigation scored intermediate results with government ministries scoring 6.5, government departments 6.1 and municipalities 6.8, out of a possible 16.7. Most government websites provided the variables e-Government services link to other agencies. The chat areas/message boards' variable has been found only in the Department of Income Tax. However, when looking through the message board, it only contained a few participations dating back to several months before accessing the website which indicates the low participation of citizens. The variable link to contact information has been found in all websites. Though, when contacting all 30 government agencies within the sample asking them the following questions:

- Where is the agency location?
- What are the opening times of agency?

Only 4 agencies answered the questions. This finding reflects that most government agencies are not seriously dealing with citizens through online interactive channels.

8.6.5 Information Architecture

The information architecture dimension generally scored low throughout government websites. Government ministries scored an average of 5, municipalities 4.5 and government departments 9.1 out of a possible 16.7. Most of the government websites had the variables information about agencies/departments, services and branches of government. Only the DLS and the Ministry of Industry and Commerce had the variable audience focuses architecture. No government agency had the variable

personalized/customizable. Branding has been the most evident variable in government websites. Nonetheless, branding has not been for the government agencies or e-Government, branding practices included the flag of Jordan, pictures of the royal family, symbols of patriotic initiatives, speeches of the king, links to personal websites for the royal family, all of these have been dominating the visible structure of the websites .

8.6.6 Legitimacy

The legitimacy dimension which is associated with the website being authentic in order to increase trust levels among e-Government users has been the lowest scoring dimension. Government ministries scored a poor average of 2.4, government departments 4.2 and municipalities 1.4, out of a possible 16.7. This poor result is because all Jordanian Government websites offered mainly informative services, few interactive services and no EC applications. This made the variables privacy policy, security policy, authentication password/digital sign score zero for most government websites. Even websites that offered interactive services did not have any security measures except setting up passwords. Variables privacy policy, security policy, disclaimer statements have not been found in any website. The variable webmaster contact has been available in almost all government websites. However, only 3 government ministries replied when the sample was contacted and asked whether the website contained a map for agency location. This is another indicator that reflects the low level of commitment from government agencies to serve citizens online.

8.6.7 Accessibility Accommodation

For accessibility accommodation which is associated with government websites providing mechanisms that address the needs of the disabled scores have been very low. Government ministries scored an average of 3.6, government departments 3.3 and municipalities 3.3, out of a possible 16.7. This however reflects the feeble design of governmental websites to meet with people with special needs requirements. When evaluating the Bobby compliance variable most government websites generated three Priority 1 accessibility problems. No government agency provided a Text telephone feature.

8.7 Results Discussion

The Jordanian Government websites analysis confirmed the findings of document analysis demonstrating a struggling e-Government failing to deliver and supply citizens with added value effective services that respond to their needs. Visibility analysis indicated that there is a very low demand and use of e-Government in Jordan. The low demand and use becomes more evident among people who use the Arabic language to access the Internet. Stage analysis indicated that the Jordanian Government is still in the informative level of service delivery. Finally website usability analysis which was the main extensive analysis examining online services, results revealed that the Jordanian Government websites have not been designed to meet with people's expectations and needs.

8.7.1 Characteristics of Jordanian Government Websites

Usability analysis in addition to assessing the usability of government websites exposed the following characteristics of e-Government websites in Jordan:

1-Government websites not meeting citizens' needs

In addition to government websites having a poor UI score other specific indicators when testing government website reflect the big scale of the problem confirming that government websites have not been created to comply with citizens' needs, such simple indicators when using e-Government are:

A) Language: As discussed previously in the results of User-help dimension, some government websites have been offering information only in the English language which is contributing to the digital divide among citizens.

B) Contact details: Many government websites offered telephone numbers of government agencies without the international key. However it is expected that large numbers of e-Government users are living outside of Jordan. Other websites did not have the national key such as the Ministry of Irrigation where most farmers are located out of the capital. There have been no contact details for the Ministry of Health which is an important ministry.

C) Low speed: Since Internet connection is very low in Jordan and in addition high speed connection is expensive, most of the people in Jordan are connected online through dial-up (REACH, 2000). In order to meet with citizens' capabilities, instead

of government websites being fast with simple graphics, government websites have been found very slow. Furthermore many had a flash introduction which makes people with dial-up access wait a long period of time before accessing the government webpage when surfing it.

D) Citizen Low participation: This was identified by the low visibility of government websites. Another indicator was that the only online government forum and message boards provided by government websites have been found almost empty with few participations going back over a significant period.

2- Low quality government websites

Most government websites had faults in them. For example the Ministry of Water and Irrigation had a website with all internal links disabled on its front page. Similarly the Ministry of Justice website has been under construction during the year 2006. When the ministry's website was launched and accessed on August 2006 it had a front page with all internal links disabled. Other government websites had many empty links resulting in an error page when accessing them, or links declaring that information is under structure. The Ministry of Environment had an online library search which was considered to be an advanced feature compared with other governmental websites, however when searching the library it returned the same results for any search entry.

3- Government websites not being updated

The updating of government websites has been monitored through checking the latest news, events and recent job opportunities posted on the agencies' websites. Although some government websites had been updated from time to time it was noticed that updates have not been done on a daily or a short period of time basis. A few websites have been updated every couple of weeks, others have been updated every couple of months. However the majority of websites contained information dating from a long time back with no indication of any update performed on them. The slow process of updating the content of government websites resulted in governmental websites containing in adequate information that discredits government reliability. For example the Ministry of Culture when its contact details were accessed had the current Minister details as Mrs. Asma Khader with her e-Mail address beside her name. This was on July 2006. However, Mrs. Asma Khader had left her position as a minister more than 8 months before that date, precisely on the November 2005. A similar example was the Municipality of Zarqa (the second biggest municipality in Jordan) website which had on its

Front Page on July 2006 a welcome statement from its mayor Mr. Raafat el Majali, similarly Mr. Majali had resigned more than two months before that date and was replaced by Mr. Jamiel Al Momani.

8.7.2 Problems with Implementing e-Government in Jordan

A government website can give an indication of the inside of an agency. Website analysis also indicted problems with the implementation and management of e-Government both within government agencies and central government. The most important have been:

1- Lack of monitoring and testing

Poor government websites in Jordan reflect the lack of monitoring procedure on them. Many government websites were in dire conditions, for example the Ministry of Energy and Natural Resources was only in the English language, had a very poor design and interface, most of its internal links were broken and information was out of date. The appalling condition of the website existed for more than 4 years with no actions taken to fix the problems. Appendix 7 at the end of this research shows examples of front pages of main Jordanian Government websites. Furthermore, the Ministry of Post of Communication (MoPC) in 2002 changed its name to MoICT. Eventually the Internet address of the ministry was changed from www.mopc.gov.jo to www.moict.gov.jo. When examining ministry websites that had links to other government websites, many of the websites when clicking on the links to the MoICT website still had the link for the old address of the ministry (www.mopc.gov.jo) which resulted in the creation of an error page. This indicated that even after more than three years from the ministry changing its address some ministries, due to the absence of check-up and feedback methods on government websites, had the link to the old address of the MoICT. This included the Ministry of Foreign Affairs, Tourism, the Ministry of Housing and ironically the Ministry of Public Sector Development.

2- Lack of coordination

It was noticed that coordination between different government agencies was very low; this has been concluded from the diversity of themes and interfaces of governmental ministers, agencies and municipalities. Each one of the 30 analysed websites had its unique theme with different information architecture which makes novice users struggle when navigating through

government websites. This is because users have to adapt each time to a new website interface. Instead of having an agreement on theme and structure for government websites, each government agency was working on its own adopting its unique understanding of e-Government.

3- Lack of centralization and lack of clear guidelines

Identifying website ownership is a method used to identify the developer of the governmental website (Kaaya, 2003). Ownership is usually observed beside the copyright and date of launch of the website. When analysing the ownership of Jordanian Government websites various results have been found. Some government websites were developed by the government agency IT team, other were developed by reputable IT companies in Jordan such as Batelco Jordan, some were developed by less reputable companies and in addition, as discussed previously, each government agency had a unique theme, layout and architecture. These findings reflect that there is no standard method and clear guidance for government agencies as to how to structure their website and no clear guidance as to who must be responsible for that. The absence of monitoring of websites as well as the absence of feedback methods indicates that there is no review of governmental websites strategies within government agencies in order to achieve e-Government goals. Consequently this had led to the development of different government websites which are weak in usability, not up to date and more importantly government websites seem not to understand what the purpose of their existence is.

4- Cultural problems with e-Government

An alarming finding from the website analysis is that of the ICT departments in government agencies who are responsible for the government website who were contacted and asked whether the government website contained a location map for the government ministry, 85% did not replay and 2 e-mail addresses were not working. This attitude coming from the IT departments who are also responsible for launching e-Government initiatives, reflects a big cultural problem when dealing with e-Government services, where the most qualified people to execute e-Government are not dealing effectively with online working methods.

5- Agencies dealing with e-Government implementation as technical issue

Ballantine & Cunningham (1999) pointed out that government officials in developing countries are frequently technology centred, rather than information centred when thinking of e-Government initiatives. In the case of Jordan when running the website analysis on agencies implementing e-Transformation it was felt that all websites were managed and run by IT departments within government agencies with no linkage to agencies' strategy or process, the evidence of that was obtained from online services being not integrated with employees' process even on a very simple level such as using the e-mail. Also websites lacked any mentoring process. It seems that government agencies have developed a culture of dealing with e-Government as being related to the IT department and being a complicated technical issue that is therefore separated from agencies' strategy and process. Consequently e-Government implementation, management and monitoring is being transferred to IT departments in government agencies.

8.8 Summary

Subsequent to conducting several methods of website analysis, findings from the analysis revealed that the Jordanian Government websites are not effectively delivering services. Visibility indicated the low demand on e-Government websites, stage analysis indicated the government agencies are failing to integrate in order to deliver advanced services therefore e-Government was in a low level of development. When website usability analysis was measured by a tool developed by Baker (2004) to test if government websites are constructed in a way to comply with citizens needs, Baker's tool measured six different usability dimensions which were (a) online services, (b) user-help, (c) negative (d) legitimacy, (e) information architecture and (f) accessibility accommodations. Results revealed that the Jordanian Government websites have been constructed in a way that ignores those needs. Government websites in their current conditions, instead of bringing citizens closer to e-Government, are contributing to widening the gap between government and citizens. Websites content analysis also showed that Government websites lacked guidelines and strategy for online service delivery. Not surprisingly most government agencies websites were any more than an extension of public sector culture on the Web. Findings also highlighted different problems with the implementation of e-Government in Jordan on a national level within central government and government agencies. This included the absence of monitoring progress and testing websites, the lack of coordination and the most importantly government agencies not understanding the purpose of the implementation of e-Government.

Chapter 9

Discussion

9.1 Introduction

This chapter discusses the general findings of this research. The discussion will summarise the outcomes of previous chapters which identified problems related to the deployment of e-Government in Jordan, in addition to examining the scale of the existing gap between e-Government and people. Following that, the findings of this research will be discussed with Jordanian officials responsible for and involved in e-Government deployment in Jordan. The discussion ends by summarising Jordan's experience in implementing e-Government as a developing country compared with both developed countries and other developing countries that have implemented e-Government.

9.2 Research Summary

In Chapter 2, six research questions were constructed to solve the research question **"is there a gap between supply and demand of e-Government in Jordan?"** The following summary of the answer for the six research questions will outline the research:

Question 1) How is e-Government successfully implemented in a country and what are the requirements and practices?

The first step in this research (Chapter 2) has been allocated to understand the theoretical origins of the concept e-Government, from where did it evolve, its relation to EC, its definition, types, benefits, the extent of its spread around the world and what are the drivers for countries to implement a project requiring so many resources.

This review created the necessary theoretical understanding to start to answer the first research question. In Chapter 4 requirements and practices for successfully implementing e-Government on a national level have been identified by constructing a generic e-Government implementation model creating a solid platform for understanding the e-Government topic.

Question 2) What is the actual demand for e-Government among the Jordanian populations? Are there factors that encourage people to use e-Government in Jordan? What are they?

Empirical research has been used to examine the demand side on e-Government in Jordan. Chapter 5 argues that most of the people in Jordan are not expected to have a high demand level for e-Government services. The same chapter highlighted that people have many needs which must be met before they will be in a position to demand a high level of e-Government services. The hypothesis has been presented in an e-Government adoption model. Chapter 6 records collected quantitative data from the e-Society in Jordan to test the proposed hypothesis. Findings indicated that people in Jordan have a higher demand on informative e-Government, also they require computer and Internet access, trust in the Internet, trust in the Government and compatibility with online services before they can demand high levels of e-Government services.

Question 3) What is the government of Jordan promising to deliver to people by e-Government to? How is Jordan doing so far?

Chapter 7 reviewed the Jordanian Government's announced e-Government objectives, strategy, progress and the citizen's position within e-Government. This has been carried out based on document analysis. Results also indicated that the Jordanian Government intended to achieve high level e-Government services in order to respond to citizen needs assuming people demand e-Government services. Results also indicated that there are many problems when deploying e-Government both in central government and within government agencies which are affecting the Jordanian Government electronic transformation. Analysis demonstrated that the Jordanian Government is failing to deliver promised services and in addition the government is

not implementing adequate practices to augment the e-Society in Jordan which indicates that e-Government is not aware of citizens' actual needs and demands.

Question 4) What type of services is the Jordanian Government delivering online? Are services well constructed and responsive?

Chapter 8 examines the level of services that the Jordanian Government is practically delivering to citizens. In addition usability analysis has been used to enable the researcher to examine government websites' construction from a different aspect related to citizens needs. Results indicated that the Jordanian Government failed to achieve its goal of an advanced level of e-Government service. Nevertheless the Jordanian Government is also failing to achieve adequate informative services. Usability analysis indicated that government websites have been constructed in a way that ignores people's needs and furthermore do not respond to the variables that will increase people's demand on e-Government services. Practically the Jordanian Government had a weak online presence and that is having a damaging effect on trust in the e-Government and its reputation. Analysis revealed various problems in understanding and deploying e-Government within central government and across government agencies.

Question 5) Does government supplies of e-Government comply with citizens' demand and needs?

The following discussion in this chapter which will be based on assessing the demand side of e-Government examined in Chapter 6 and investigating the intended and actual supply of e-Government in Jordan examined in Chapter 7 and Chapter 8, explaining the existing large gap between government and people's perspective on e-Government in Jordan. This gap is mainly due to the Jordanian Government's weak execution of e-Government which is affecting the adequate supply of online services. An additional cause contributing to the problem is government not being aware of citizens' demand and needs from e-Government. in practice the Jordanian Government seems technologically driven in its implementation of e-Government, ignoring important social and cultural barriers that should be addressed when developing and deploying a national e-Government strategy.

9.3 Discussion of Results

9.3.1 Model Construction (Qualitative interviews)

The 4 qualitative interviews conducted with e-Government experts across the UK to gain their feedback on the constructed e-Government model presented in Chapter 4 indicated that there was a need for constructing such a model because of the topic is multidisciplinary and not well defined. Interviewees emphasised that such a model is necessary to have more understanding about e-Government. The presented model gained the general approval of interviewees with some concerns which have been resolved in order to present the final version of the model shown in Chapter 4. The model it self helped the researcher to recognise and analyse different problems with the implementation of e-Government in Jordan when conducting the document and websites content analysis. The model presents an overview on e-Government that other academics, politicians and managers could benefit from.

9.3.2 Online Questionnaire Results

An online questionnaire was used to measure the Jordanian e-Society demand level on e-Government services in addition to understanding their needs in order to adopt e-Government. As well the questionnaire was used to identify the characteristics of people responding to it in order to have a general understanding of e-Citizen. Results, as expected, indicated that the demographics of the people who responded to the online questionnaire had general common characteristics, the majority of them being young, educated, living in the capital, male and wealthy. People falling outside of these categories had a low participation rate in the questionnaire. In relation to the demand on e-Government services the e-Society had a different perspective from the Jordanian Government: where government is seeking integrative levels of service delivery and believing that e-Government success will come from providing advanced services online, the Jordanian e-Society is demanding a basic informative level of service delivery. In order to adopt e-Government people need more than computer training and ICT skills. They require connection capability, compatibility with the Internet and e-Government, trust in the government and trust in the Internet.

9.3.3 Document Analysis

Conducted document analysis revealed different points of view regarding the progress and the output of the Jordanian e-Government project. These differences are based on the source of information and the publisher of the document. Publications can be categorised into two main categories. These are:

A. Government Publications: Official MoICT publications, Government website statements and Jordanian media generally had an optimistic approach when talking about e-Government. They tended to present the positive aspects of e-Government if it is achieved. In addition publications tend to present the training for employees or installed number of computers as further proof of success. Practically such achievements do not reflect an adequate measurement of any credible success. Government documents seem to understate the real effort, cost and change required to achieve and deliver an e-Government state by setting ambitious targets within short time periods (MoICT, 2006), although some Jordanian Government publications emphasize the importance of resolving concerns that effect the development of e-Government (REACH Enablers, e-Government Building Blocks) such as people's connectivity, required legislation and the need for technical and managerial expertise. No clear strategy or action plan has been presented to resolve identified concerns and furthermore these important concerns seem to be marginalised by the enthusiasm of the process of starting up e-Government. An additional finding from Jordanian Government publications is that they tend to regard the adoption and consumption of e-Government services among the Jordanian populations as granted. Jordanian Government is assuming that "if people were taught how to use computers and if people acquire a computer they will definitely use online government services provided by government".

B. Independent Publications: On the other hand, it was found when analysing research produced by independent researchers who reviewed Jordan's ICT and e-Government development, that their findings identified e-Government transformation as a complicated process which needs immense recourses. In addition these publications concentrated on the difficulties facing the implementation of e-Government in Jordan. Furthermore the majority of them concluded that the Jordanian e-Government is experiencing cultural, managerial and structural problems with e-

Government adoption and development. Regarding the gap between the demand and supply problem Ciborra & Navarra (2005) suggest that the Jordanian e-Government project is a one sided project implemented by government while citizens' needs and demand are ignored.

9.3.4 Website Content Analysis

Website content analysis of the Jordanian Government websites results consolidated previous independent researchers' work. Website analysis indicated a dramatic failure in delivering and implementing e-Government and also indicated the lack of basic knowledge of e-Government requirements within both central government and government agencies involved in the e-Transformation process.

Results showed that the Jordanian e-Government had a low visibility on the Internet, which suggests that there was a low demand for e-Government. In terms of its development Jordanian e-Government was mainly in the informative stage. When analysing the government websites' usability from 6 different dimensions (a) online services, (b) user-help, (c) navigability (d) legitimacy, (e) information architecture and (f) accessibility accommodations. Government websites had very low usability and most of the government websites are failing to achieve the basic requirements of a well established website. In fact most of the Jordanian Government websites had a negative online presence because of their poor presentation, many errors and the un-useful, out of date information found on most of the Government websites. Findings show that the government is not aware of citizens' actual demand for e-Government services. Also Government not knowing peoples actual needs in order to become e-Government users has created a gap between people and government. Furthermore government with its current weak online delivery is contributing to widening the gap, which might have a negative impact on trust in the government and on its credibility.

9.4 Understanding the Problem

Previous discussion of the analysis indicates that the Jordanian e-Government project is facing two main categories of problems, these are:

1- The Jordanian Government has problems in managing and implementing e-Government. These problems however include central government which is responsible for the implementation and management of e-Government across Jordan and problems with e-Transformation within government agencies.

- Central government is not doing what is required to effectively manage and enable the e-Transformation across government agencies.
- Government agencies are struggling with the implementation of e-Government initiatives and are failing to transform.

2- There is an existing gap between government and people's perspective on e-Government. Figure 9.1 illustrates the gap problem.

- The Jordanian Government has a problem with understanding citizens' needs and the demand level on e-Government services, where government is willing to achieve integrative levels.
- People on the other side have a low demand for e-Government and are not willing to use it. Also people require more than ICT training and ICT equipment in order to start using e-Government services.

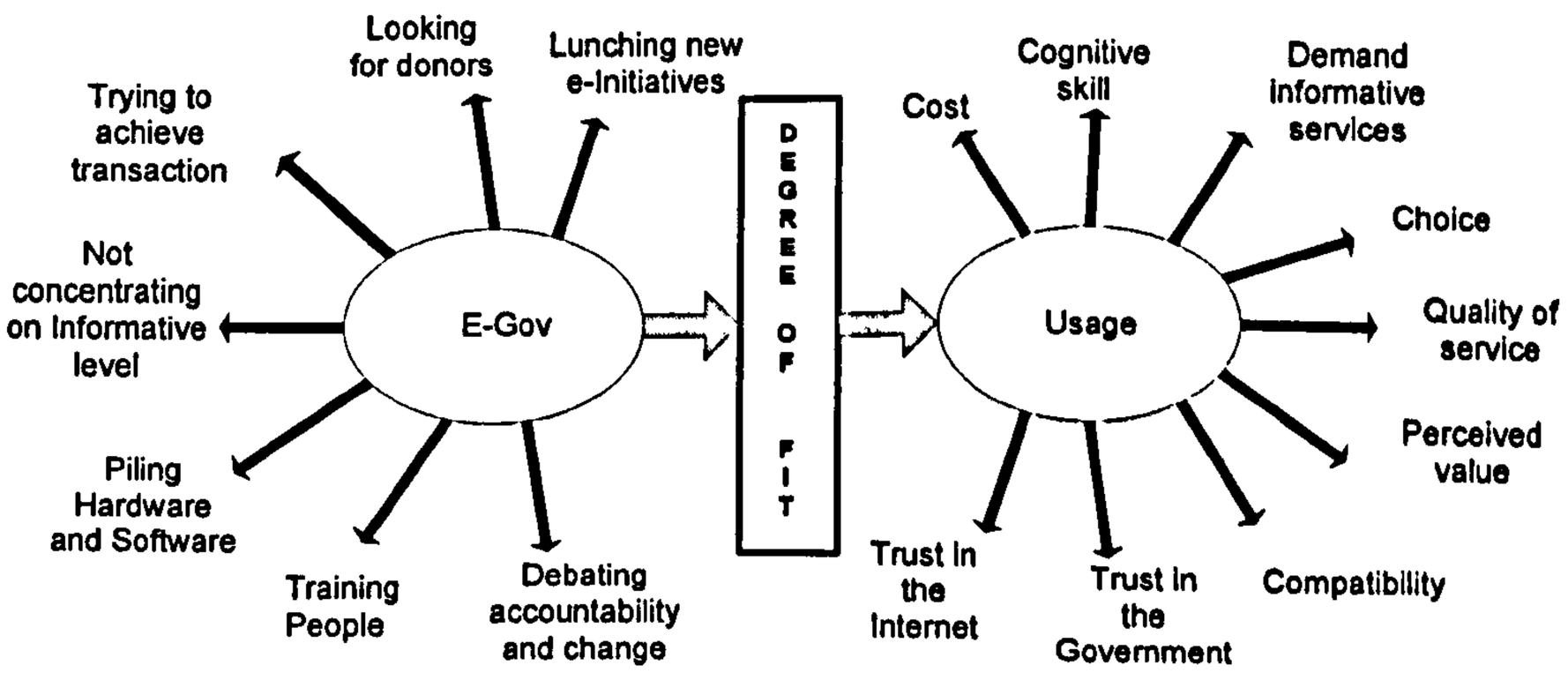


Figure 9.1: Existing gap between government and people in Jordan

9.4.1 Main Problems Related to Implementing e-Government

Document and website analysis revealed several major problems regarding the implementation and the management of e-Government across Jordan, problems previously discussed in Chapters 7 and 8. These were:

- e-Government lacking adaptable strategy
- Lack of focus from Central Government
- Lack of project ownership
- Central Government failing to execute main enablers
- Public sector existing structure and culture
- Technical problems within government agencies
- Lack of IT expertise within government agencies
- Central government not understanding citizens' and business's needs
- Lack of monitoring and testing from central government and government agencies
- Lack of coordination between government agencies
- Lack of centralization and lack of clear guidelines for implementing e-Government

These problems are affecting the supply quality of e-Government services. By going back to Chapter 4 and looking through the developed e-Government model, problems found during document and website analysis related to the implementation of e-Government in Jordan can be effectively identified. Appendix 8 presents a review on the Jordanian e-Government project through the generic e-Government model.

9.4.2 Main Problems Related to the Gap between Government and People

The following discussion will bring together all conducted analysis in order to clearly verify the existing gap problem.

9.4.2.1 Demand on e-Government

When testing Jordanian e-Society demand on e-Government, results showed that e-Society has a modest demand on the informative level of e-Government. The level of demand dramatically decreases as the services level of e-Government increases. The level of demand on e-Government is expected to be much lower among the people

who are not from the e-Society. Government on the other hand is concentrating on a high level of online services believing that e-Government success can be achieved by enabling complicated online service. The Jordanian Government seems to underestimate the importance of informative and simple interactive government websites as an additional channel of communication with citizens which can provide both parties with huge benefits.

9.4.2.2 People's Needs and e-Government

People needs have been hypothesised and presented in Chapter 5. Furthermore needs have been tested in Chapter 6. Chapters 7 and 8 tested supply side of e-Government. The following discussion will identify whether the Jordanian Government was responding to people's needs.

a) Compatibility

Analysis indicated that the Jordanian e-Society had a medium level of compatibility with e-Government services. Also analysis illustrated that compatibility with e-Government services has a very strong correlation with the IU e-Government services. Also compatibility proved to be a significant variable affecting the IU when running regression analysis. Compatibility with computers and the Internet is very low among the Jordanian citizens (around 15% of the population) therefore their demand on e-Government will be very low. The extent of the compatibility problem is not only associated with non Internet users it is also present within the e-Society it self who are expected to be the most compatible with e-Government services. Results of the survey revealed that the e-Society has low compatibility levels with payments online and providing personal information. This is mainly due to the absence of EC activities online in Jordan. In addition only 25% of the e-Society had a credit or debit card which means that the majority of them lack an online payment mechanism.

Jordanian Government publications indicated that the government highlighted the importance of empowering people with Internet connections and Internet skills. However, Government has not been successful in promoting EC activities and in

legislating required laws that will enable online activities in Jordan. This led to the failure in performing actions that would promote computer based activities and the Internet as part of people's lifestyle.

The government introduced training courses for people (Knowledge Stations) and employees (ICDL, CISCO), which are general computer skills courses and not intended to train people and employees for a way of work to be implemented on a regular basis in their life. Website analysis indicated that government websites provided services that did not involve any integration between government employees and websites even at a simple level such as e-Mail enquires, yet when government tried to integrate the Internet with employees' working methods it used wrong schemes. For example the Department of Income Tax published all of its employees' e-Mails on the web between 2005 and 2006. When contacting e-Mail addresses almost all of the e-Mails were not functioning which indicated that employees' e-Mail accounts have been expired most probably because they have not been accessed. The only explanation for e-Mails not being accessed is that they are not part of the communication and working process within the department. No rules enforcing e-Mail communication between employees has been adopted such as the Paper Elimination Act which was adopted in some agencies in the USA and Australia (Fletcher, 2002).

b) Trust in the Internet

The survey proved that trust in the Internet is a variable which has a positive relation with the IU e-Government. It also showed that the e-Society in Jordan has a low level of trust in the Internet. In fact trust in the Internet has been the lowest scoring tested variable in the e-Society. What is alarming from this finding is that it mostly came from experienced Internet users.

Low trust levels among citizens in Jordan are mainly because there is not enough legislations and laws covering online activities. Dutton & Shepherd (2006) studied the trust in the Internet; what they refer to as cyber trust, within British society using a qualitative to quantify survey that included more than 2,000 participants. They found that people who do not use the Internet generally have much lower levels of cyber

trust than people who use it. This is because Internet users know how to collate and interpret online information. This could enhance their ability to authenticate the value of products, services and information, thereby protecting themselves against cyber fraud and crime. However, others with less expertise tend to remain offline, fail to experience the Internet and are more likely to distrust the technology. Therefore trust in the Internet is expected to be even less among the majority of the non-Internet users in Jordan who account for more than 80% of the population.

Government official documents indicated that the Jordanian Government understood the importance of passing laws that will enable online activities. However, the Jordanian Government has been very slow to execute the required laws with most of the laws still waiting to be passed. Website analysis indicated that government took no action when designing websites to address this need. Part of the usability analysis that measured the legitimacy dimension which is associated with increasing citizens' trust in online services and reassuring them of its safety indicated that legitimacy has been the lowest scoring dimension within the Jordanian Government websites.

c) Trust in e-Government

The survey proved that trust in the government is a variable which has a positive relation with the IU of e-Government. Therefore government must try to increase trust among the e-Society so that they will use e-Government services. Also results showed that the e-Society in Jordan has a modest level of trust in the government. The majority of people not using the Internet are expected to have lower trust levels since they come from the majority of Jordanians who have very limited income (Peters, 1999). The Korean and Japanese experiences show that the implementation factor among citizens for e-Government in their countries is not a technical one but is related to trust in their governments. Citizens of Korea and Japan themselves do not trust the government to separate itself from other interests, particularly the military departments of the government. Therefore people in those countries prefer not to adopt e-Government (Evans & Yen, 2006). The case of Korea and Japan can be similar to Jordan's since people are used to government services being associated with the security departments in many cases. Some developing counties have imposed

restrictions on online opinion expression such practices might effect people's general trust in e-Government exposing their concern of government using ICT to monitor their activities in what is referred to in e-Government literature as the 'Big Brother' state (Silcock, 2001; Jho, 2005).

Government publications did not highlight the importance of building trust between people and government through websites, or the importance of making use of websites to consolidate a relation with citizens. Website analysis showed that the e-Government did not make any effort to establish any relation with citizens through websites. Instead government websites with their current poor format and out-dated information could contribute to decreasing trust between government and people. The Jordanian Government websites lacked any message or statement that the goal of their online presence is to serve citizens and be close to them, responding to their needs and updating them with up-to-date information. Instead government websites were dominated by national symbols and statements. This may create long term complications, so that even if e-Government succeeds in the future to deliver online services large, segments of society will not use it because of the low trust level in government which has been increased by the government's poor online presence.

d) Previous Experience with e-Government

Survey results indicated that previous experience with e-Government variable had a strong correlation with the IU e-Government. However, when running the regression analysis on the research citizen e-Government adoption model, the variable was found not significant. This could be explained because previous experience has a relation with the IU e-Government though it is considered not significant by the presence of the most significant variables related to IU. Another important finding is that previous experience with e-Government affects the trust level in government. Therefore previous experience with e-Government will affect the general norm and reputation of e-Government. If e-Government is branded as being an unreliable source of executing services and obtaining information it will be very hard to divert people's opinion. Jaeger & Thompson (2004) support this argument by stating "When a group of people in a small world shares the same view that e-Government information is not worth the effort to find or use, then social norms of not using e-Government are created".

Website analysis revealed that government websites lacked the understanding of minimal requirements for being service oriented online. Websites had a weak online presence, many errors and in plenty of cases information was out of date. Plenty of researcher indicated that government websites present the front office which could be the reflection of the government back office.

e) Capability of citizens in Jordan

Capability involves people's needs related to accessing e-Government from a financial and skill perspective. Skill capability was not directly measured by the survey except that it was reflected by the e-Society demographics and Internet characteristics discussed in Chapter 6. Survey results indicated that 83% of the e-Society thought that Internet prices are either expensive or very expensive in Jordan, taking into consideration that 90% of Jordanian families have a very low income which makes possessing a computer and connecting to the Internet a challenging task.

Along with the e-Government's poor performance in delivering and executing services to people, efforts to connect people were disappointing. Statistics showed that during the past 6 years the project has failed to connect online the vast majority of the Jordanian population, with official figures indicating that Internet users accounted for only 8% of the total population and the number of PCs in Jordan is 4.5 per 100 users in the year 2005. These numbers reflect the reality of the weak existence of a true e-Society within Jordan. The Jordanian Government concentrated on the skill part of the capability need by applying extensive training programmes for employees and establishing knowledge centres to teach ICT skills across Jordan in order to tackle limited access and solve the problem of the digital divide. Conversely bridging the digital divide is not a concern at this stage because there are not any EC and e-Government activities taking place in Jordan. This may indicate that that there is not a clear realisation of priorities at this early stage of e-Government project in the Jordanian Nation. This practice as well as consolidating the argument that there is an existing gap between government and citizens, indicates that the government is assuming that people need e-Government services. Administration is assuming that there is a digital divide problem and assuming that if they train deprived societies this will enhance their capabilities and they will join the global e-Society. Another

important issue is that if a trained person does not acquire a computer and use the Internet for any activity he or she will quickly lose the basic skill they developed through training.

9.4.2.3 Digital Divide in Jordan

One of the important findings of the research is that the digital divide is not a concern in the current situation of Jordan because people who are not connected online are not missing out on online benefits. In fact if the digital divide causes are removed this will not affect the consumption rate of e-Government services, since they are at a very low level. This situation is referred to in the literature as pessimistic digital divide (Skok & Ryder, 2004). Therefore the Jordanian Government before concentrating on the problem of the digital divide and assuming that people are missing much, may have to concentrate on the existing e-Society by trying to improve it through enabling commercial and social online activities in Jordan to create a solid user base for future services.

9.5 Feedback from Jordanian Officials on Existing Problems

10 interviews in five different Jordanian ministries have been held in Jordan between June and August 2007 to discuss the findings of this research with a number of Jordanian public sector officials responsible for the implementation of e-Government. The discussions highlighted the current strategic problems facing the deployment of e-Government in addition to discussing the extent of the existing gap between government and people. Table 9.1 summarises the place and the participants in the interviews.

Table 9.1: Qualitative interviews in Jordan

Ministry	Participant	# of interviews
MoICT	The E-Government Programme Office	2
Ministry of Planning	Senior IT Manager & employees	2
Ministry of Tourism	Senior IT Manager & employees	2
Ministry of Public Works	Senior IT Manager & employees	2
Ministry of Education	IT employees	2
		Total = 10

9.5.2 Data Collection and Analysis Procedure

All conducted interviews have been built upon a general interview guide approach. This has been done to ensure that the same general areas of information are collected from each interviewee who gives more focus than the conversational approach, but still allows a degree of freedom and adaptability in getting the information from the interviewee. The question types have been standardized open-ended. The same questions were asked to all interviewees as this approach facilitates faster interviews that can be more easily analyzed and compared (Hollowitz & Wilson, 1993; Campion, et al., 1994; Pawlas, 1995). Before conducting the interview its purpose was explained to all interviewees. Also their approval was obtained to use the results of their interviews as part of this thesis with the guarantee of confidentiality for the personal information of participants. Data collected through the interview were written up as notes during the interview and the method used to analyse the interview was basic descriptive method.

9.5.3 Findings Related to the Implementation of e-Government

Data analysis revealed that most of the interviewed Jordanian officials agreed with these research findings. However the e-Government Programme Office, which is responsible for implementing e-Government, had different views on some of these research findings when compared to the other Government ministers who agreed with the findings of this research. The main disparity was on the current e-Government strategy in Jordan since it was pointed out that it does not reflect Jordan's needs and capability. This finding has gained the approval of most interviewed Jordanian IT expertise within the public sector. However, the e-Government Programme Office insisted that the strategy is realistic and is based on the country's capabilities. This may be because they were responsible for the creation of the strategy.

Interviews across different ministries also indicated that the e-Government Programme Office is not smoothly active in monitoring, supporting and coordinating different e-Government projects across Jordan. Resistance to change in addition to the public sector agencies' unwillingness to share information because of the complicated process structure and existing bureaucratic which dominates the Jordanian public sector arose as major problems that hinder e-Government transformation. The lack of required legislation, IT expertise and the heterogeneity of existing systems were also focal problems facing prospective e-Government integration. It was also noticed that ministries involved in e-Government did not know about current and previous ICT initiatives in Jordan. Also there has been no consistency in IT employees' positions and no consistency in IT plans within each government agency leading to the lack of concentration and of project ownership in most deployed e-Projects. Generally speaking e-Government in Jordan has set up promising goals and people involved in it are dedicated in trying to make it deliver effective online services, still there is a sense of pessimism between some people involved on e-Government being successful in any near future.

9.5.4 Findings Related to the Gap between Government and People

Interviews confirmed the existence of a gap between supply and demand on e-Government services in Jordan which is mainly due to Government acting as both a supplier and consumer of e-Government at the same time. When speaking to the e-Government Programme Office about these research findings and the low demand for

high level services they replied that there is a segment of business men who are willing to use such services and therefore it is worth providing this segment with online service. However, this segment that e-Government would satisfy if it succeeds is very small across Jordan. Also when speaking with the e-Government Programme Office about the necessity of empowering and developing the e-Society, they replied that this was not their responsibility indicating that other Government bodies are responsible for developing the e-Society and their work is to focus on integrating Government bodies to deliver e-Services. This situation may contribute to not understanding people's needs where the people in charge of e-Government assume that its success can be achieved by delivering online interactive services and being not directly involved in citizens ICT empowerment. Also when speaking with the Office about the website content analysis findings their reply was that Jordan has achieved the informative service level for a long time and their concentration now is on achieving a high level of online services, playing down the consequences of a weak online presence and not giving any indication of any intention to resolve the Government's websites existing problems.

Interviews within Government ministries deploying e-Government indicated that some of them don't have any criteria when choosing prospective services to be available online (Business Plan, or Feasibility Study). There is no method to determine which services is in high demand not an ability to evaluate the willingness of people to use them. When addressing this concern to IT managers some of them expressed that there is a need to make available online services when achieved compulsory by only providing the service online. This suggestion reflects the top-down mentality existing in the way that e-Government is being implemented in Jordan. Also it shows a level of unawareness of e-Government fundamentals, forgetting that online services are a choice at the end of the day for people who need them. People responsible for deploying online services in Government ministries seemed unconvinced that e-Government will succeed in Jordan, making it clear that there is a culture barrier between citizens' willingness to conduct online services dominated by trust, compatibility and capability needs. However these concerns have been expressed on a personal level by IT managers and when asked why they not raised their concerns their reply was that they needed to comply with The E-Government Programme Office instructions not to question the expected usability

levels and value of such online services. When speaking to different ministries about the importance of information services and the significance of their improvement, it was unspeakable to find out that they shared the same views as the E-Government Programme Office as they considered information services not to be a real service and expressed their opinion that the need was to concentrate on delivering integrative services neglecting any positive or negative effect that information levels of online services will have on Government and people.

9.6 Impacts of Weak Delivery on Government and People

It was not surprising to find out that e-Government is not working in Jordan since Jordan belongs to the category of 'most failed and failing states' - defined as a state which is unable to maintain growth and development for the majority of its people and the achievement of Millennium Development Goals (UNDP, 2002). The implementation of e-Government based on the country's history and profile will not bring a solution for its existing problems and failing practices unless a major well planned reform initiative is established which reflects the social and economic needs of the country. The weak delivery of e-Government is negatively affecting Government and the people. The following points summarise the short and long term implications of the current implementation and delivery of e-Government in Jordan:

- The Jordanian Government becoming a huge consumer of ICT to cope with e-Government technical requirements, without investments having real value for both government agencies and people.
- Over time the e-Government project because of its continuing failure to deliver, will cause Government officials and responsible managers to become unconvinced of the value of such a project leading to the project being abandoned.
- Government losing trust and credibility among citizens because of its unreliable poor method of delivering information online.
- Future demand on e-Government will become low because of the growing mistrust and the weak delivery creating a public norm of the perception that online services are unreliable.

- International donors will become disillusioned with increasing e-Government costs accompanied by the failure to deliver which might impact future donations to Jordan.

9.7 e-Government in Jordan as a Developing Country

This section of the discussion will highlight the implementation of e-Government in Jordan as a developing country and how it is different from other developed and developing countries.

9.7.1 e-Government in the Developed World

In developed countries e-Government implementation is no more than a normal extension of managerial methods adopted in the public and private sector, starting from TQM, CRM, NPM and more recently innovation, multi technology and e-business theories (Ho, 2002; Teicher et al., 2002; Leitner, 2003; Saxena 2005). Most developed countries are involved in democracy, transparency and have high levels of freedom of speech and human rights, in addition to low corruption levels (The Economist Intelligence Unit's, 2007; Transparency International, 2007; Reporters Without Borders, 2007), which e-Government promises to improve. Therefore e-Government is no more than a competitive need and a requirement to achieve a better performance for the public sector. In other words e-Government is business and process driven. In addition e-Government strategy has been formed in a way to serve both the countries' needs and public sector agencies' needs. Most societies in the developed countries are technology friendly, with large segments of them (more than two thirds in North America and West of Europe) are involved in commercial and social activities through the Internet.

A country's social profile was an important driver to implement e-Government because not only was e-Government an extension of new managerial methods adopted in the public sector. It was a need and a demand for a large segment of the society in those countries. However, even if there was no actual demand for e-Government services, the society in those countries was technologically friendly with the Internet and computers being widely used in education, the work environment and commercial activities. e-Government perfectly fitted into both the public sector and the citizen's lifestyle and working methods. In fact it bridged the relation between Governments and citizens, responding to the needs of both, as well as creating new opportunities for the Government not only to effectively serve people but also to enhance other aspects such as e-Democracy.

9.7.2 e-Government in the Developing World (Jordan)

Findings indicate that implementing e-Government in the developing countries has proved to be a difficult task (Basu, 2004). In the case of Jordan implementing e-Government did not match needs of either government or citizens. Jordan with its profile and history may not be ready for systems where citizens are seen as customers (Dada, 2006). Of course Jordan as a country is in an excellent position in relation to its human rights record, freedom of speech and tackling corruption compared with other countries in the Middle East (The Economist Intelligence Unit's, 2007; Transparency International, 2007; Reporters without Borders, 2007). Also Jordan's record is improving every year. However, it will take a great amount of time before Jordan's profile matches that of any developed country. The Jordanian Government, not originally implementing practical managerial methods in public sector agencies and having a low level of transparency when compared to developing countries, does not appear to have found e-Government an easy tool to implement. The level of change it will bring to the public sector will be huge if compared to developed countries, it is normal that it will face resistance to change from a number of decision makers and even ordinary employees since e-Government will dramatically decrease their power and give more power to citizens (Ciborra & Navarra, 2005). In practice e-Government in Jordan appears to be technology driven rather that business and process driven.

Jordanian Government publications indicate that the government understood what is required to enable the electronic atmosphere and boost e-Government in Jordan. Controversially government publications listed requirements for e-Government as Jordan having the financial and human recourses to achieve e-Government, where the reality is that Jordan is a country with a low level of resources. It might be that the presentation of such a project with its requirements would appeal to international donors who donate hundreds of millions of dollars each year to Jordan. The USAID is reported to partly fund and donate to plenty of IT and e-Government projects worldwide examples include projects in Croatia, Macedonia, Giurgiu and Jordan (USAID/Croatia, 2006; USAID/ Macedonia, 2006; REACH, 2000). The World Bank, with the cooperation of the Centre for Democracy and Technology, has created a comprehensive "Best Practices" handbook outlining the steps needed for developing

countries to begin their own e-Government programmes (Stoltzfus, 2005). Turkey, Estonia and India are examples from the many developing countries which are getting support from the World Bank to implement e-Government Projects.

When examining Jordan's implementation of e-Government, data analysis showed the government did not manage to transform requirements into long term achievable plans and projects. The Jordanian project was so focused on the technical side of the project trying to achieving integrative services, that it forgot other achievable levels of e-Government such as informative and interactive. As a result the Government suffered many problems when trying to bring about this extreme shift forgetting the significance of the low levels of e-Government services. This led to e-Government not achieving adequate delivery for both advanced and simple levels of services which has been confirmed when conducting usability analysis.

An additional indicator of the Jordanian Government not realising the requirements of an adequate e-Government implementation is that the government did not execute the high priority enablers required for successful e-Government implementation; laws that would enable EC and e-Government transactions were not developed before mid 2007. In fact they were at a halt with a very small amount of money (tens of thousand of dollars) being previously invested in their development, compared with the tens of millions that are being invested on integrative e-Service projects without there being the requirements that would legalise and enable such services (MoPC & MoICT, 2003). Ciborra (2005) described the implementation plans of e-Government in Jordan as being "unrealistic, since they tend to ignore the complex problems of transformation". More recently Navarra (2006) also joined Ciborra in his findings which criticised the Jordanian e-Government implementation plans.

As far as the citizens are concerned e-Government was declared to be citizen focused and based on people's needs. When examining the needs and requirements of the small e-Society in Jordan for e-Government, analysis revealed that the majority of people in Jordan would prefer simple informative online services, indicating that the Jordanian e-Government failed to identify people's level of requirement. Instead it assumed people would demand a high level of services. The government concentrated on ICT training programmes where people lacked access and compatibility with e-

Government. People require being able to trust government before they will be prepared to demand advanced levels of online services. The government provided an inadequate online presence that has had a damaging effect on the government's image which contributes to a decrease of the trust in government. People also required trust in the Internet to adopt online services with government failing to legislate laws that would bring confidence in online activities. Usability analysis indicated that the legitimacy dimension which is highly associated with increasing website user trust has been the lowest scoring dimension in the Jordanian Government websites.

Technically, Heeks (1998;1999; 2002; 2003), who researched the failure of IS and e-Government projects in developing countries indicates that a major reason for these failures is the mismatch between the current reality and the new future when trying to use the e-Government systems for both developed and developing countries, Heeks illustrated this mismatch in figure 9.2 . Physical, cultural, economic and various other differing contexts between the software designers and the place it is being implemented will lead to systems and software being problematic to implement when created in a developed country and being implemented in a developing country. Also the lack of ICT expertise in computer system integration, knowledge sharing and data storage will be a significant barrier affecting the deployment of e-Government in Jordan.

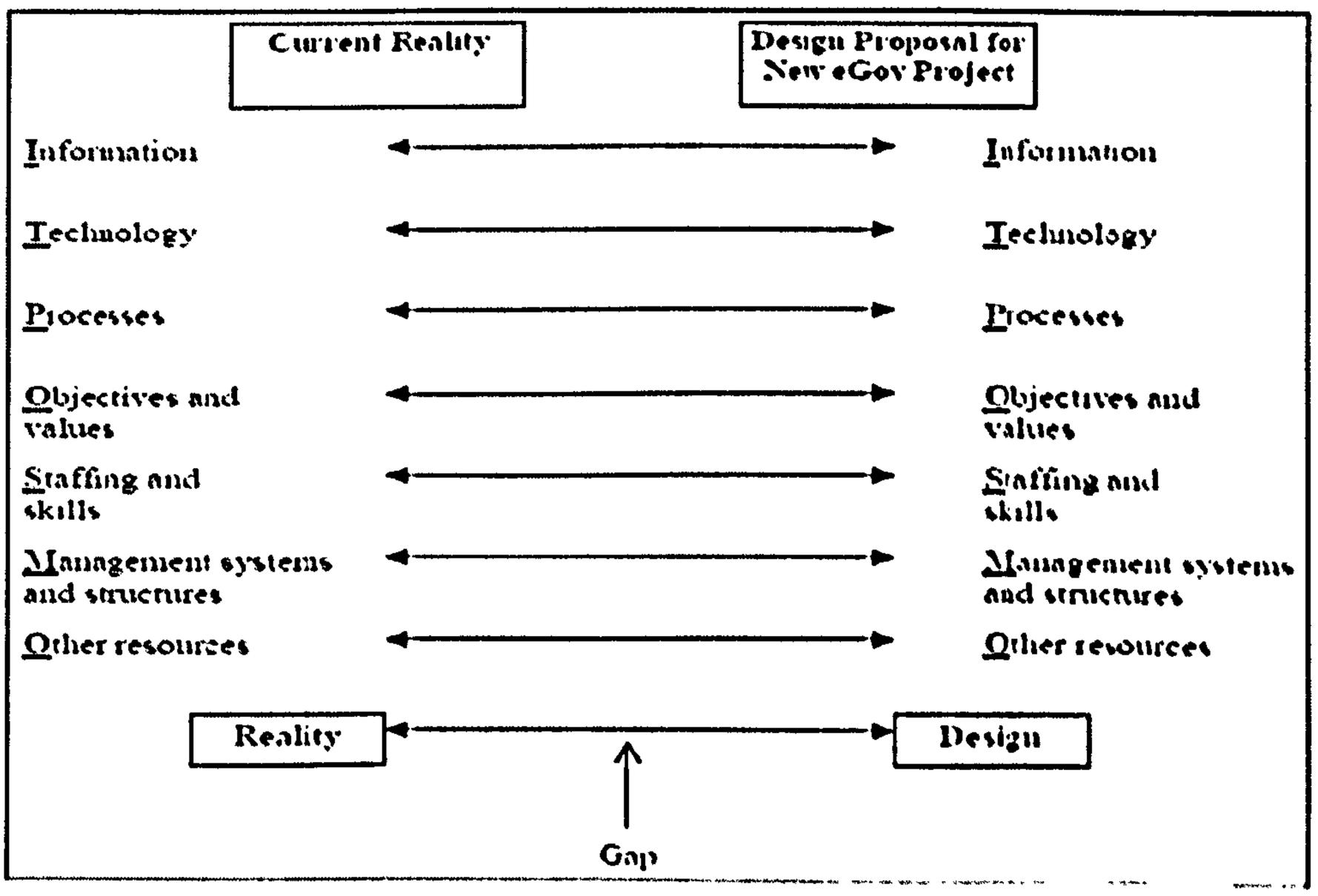


Figure 9.2: Heeks Model Illustrating the Gap between Reality and Design. Dada (2006)

On the positive side although Jordan has not achieved many of its desired outputs, it has been very successful in liberalizing the ICT market and conducting telecommunication reforms necessary for enhancing ICT investments within the country (Economist Intelligence Unit and IBM 2002; Xue, 2005). On an institutional level, although most employees are not dependent on ICT based technology to communicate with each other within their work environment, almost all employees in government agencies have a personal computer with internet access and they are becoming more familiar with ICT over time. Technically Jordan is learning from its deployed e-Government project and is building its own ICT capacity. Agencies are getting closer to solving existing technical problems that would enable ICT based working methods and services. In relation to citizen empowerment and needs, Jordan seems to have learnt from previous ICT empowerment initiatives that have not delivered the promised outcomes because they have targeted the least likely potential ICT users (MoICT, 2006c). A new and interesting scheme introduced in 2007 by the government is to subsidise and sell laptop computers to all university students in Jordan, making available long term credit repayments. This is an indication that Jordan has identified who to empower in order to build a successful e-Society.

In many ways Jordan has taken the right decision when implementing e-Government, culturally the country is more technology friendly, organisations are building their own ICT capacity and the country as a whole is more familiar with ICT initiatives eight years on. Furthermore Jordan has learnt valuable lessons which will help to channel the ICT foundations that have been created so that it will achieve the promised social and economic developmental goals (MoICT, 2006). The price that Jordan might have paid had it not adopted ICT initiatives was that it could have been left behind so that it would have needed even larger and more complicated efforts to decrease the existing technological gap between it and developed countries.

9.7.3 Successful Developing Countries

An argument could be constructed that e-Government, although not matching governments' and people's profiles can still be implemented with successful outcomes. Examples include China, Iran and Estonia. The answer to this is that such countries (Iran and China) before implementing e-Government had clearly defined

their strategy and focused on what they needed to achieve from e-Government. Therefore e-Government was defined according to those countries' requirements. China and Iran wanted to improve business integration with government, also government wanted to sustain its centralised control over governmental bodies. Both governments did not include the goal of achieving e-Democracy in their strategies. This reflected a clear understanding of what both countries wanted from e-Government, resulting in the production of implementation strategies meeting government needs. Another factor is that both countries are classified as strong economic countries with China having the world's fastest growing economy and Iran being a major oil producer in the Middle East. Estonia on the other hand had the full backing of the EU, being newly independent from Russia (August, 1991) with a small population of 1.2 million, western Europe wanted to prove that liberal capital systems do work and so they supported the implementation of e-Government there. Estonia, being a small country with a small population bordered by Scandinavian countries who are the leaders in deploying e-Government, made the dramatic shift from a non ICT country to a country having one of the most advanced ICT infrastructures in the world.

Recently research by Siau & Long (2006) investigated the development of e-Government around the world based on the countries' income level, development status and region. Their research conducted a group comparison tests using secondary data obtained from the United Nations and the United Nations Development Programme. Siau & Long findings indicated that e-Government development of high-income countries is generally more advanced than e-Government development of middle-level and low-level income countries. Such findings support the previous discussion reviewing the development of e-Government in Jordan as a developing country. The main problem of Jordan and other developing countries is that e-Government doesn't fit the countries' requirements and capabilities; furthermore strategies for implementing it were imported from well developed leading economies and technologically advanced societies. Jordan assumed that by implementing e-Government it would solve the country's problems and Jordan would join the developed world economy.

Chapter 10

Recommendations

10.1 Introduction

The previous chapter summarised the findings of this research indicating that the Jordanian Government is facing problems in implementing and managing e-Government. The research found an existence a gap between the perspective of government and people on e-Government. This chapter will propose solutions so that the Jordanian Government can achieve better implementation of e-Government and be more responsive to people's needs in order to minimise the effect of the existing gap. Following that the contributions of this research are mentioned and the final part of this chapter will discuss the limitations of this research with recommendations for future e-Government research.

10.2 Recommendations

Data analysis has shown that there is a wide gap between supply and demand on e-Government in Jordan. Furthermore e-Government itself is facing problems with its implementation leading to the current online presence of government agencies giving a dull image both locally and nationally of the government (Gupta & Jana, 2003), which might decrease people general trust in Government (Parent et al., 2004; Welch et al., 2005; Tolbert & Mossberger, 2006). Continuing to implement e-Government with the current practices may be having negative effects on the government. The Jordanian Government must start looking for solutions in order to contain existing problems and make use of investments made up until now. The following recommendations could improve the implementation of e-Government in Jordan:

10.2.1 Recommendations to Achieve Better Implementation

Redefine Strategy Based on Country's Profile: As Jordan has a weak ICT infrastructure the introduction of a new long term vision and strategy (10-20 years) combined with short term renewable plans and goals seems the most appropriate first step in solving e-Government problems. Chen et al. (2006) state "Most, if not all, currently published e-Government strategies are based on successful experiences from developed countries, which may not be directly applicable to developing countries". The Jordanian Government must start a new e-Government strategy reflecting the country's profile and culture. Strategies must be well defined and the Government has to understand what it wants from the project. When setting goals for the e-Government initiatives, Jordan must not be overoptimistic and not aim to introduce dramatic transformation within short time periods; such sudden implementation would produce extreme change that will create higher levels of resistance than expected because these methods will be completely new to the county's culture and structure. Implementation plans must be constructed that can be implemented within acceptable time frames to cope with the level of change and work to be done.

An additional very important issue is that the government identifies priorities, as well as the most effective methods to enhance the Jordanian e-Government. For instance instead of government stating that it wants to reprocess government services, activate business government integration and devolve e-Democracy, all of which are impossible to achieve in any near future, the government can set a goal of enhancing the Jordanian population's connectivity, building upon existing strengths such as having a young and educated population. Also the government can start by activating e-Mail interaction between employees and think of introducing Paper Elimination Acts. These are realistic goals that can be achieved if well defined strategies are introduced.

Central Government Legislate Required Laws: Although the Jordanian Government has identified the REACH programme enablers in addition to identifying required building blocks to successfully implement e-Government, the government is not executing most of the recommended enablers, for instance the legal and regulatory framework; while REACH (2000-2004) follow up reports each year highlighted the

necessity of legislating electronic transaction law (Ciborra, 2005), online authentication law, online payment laws and laws related to EC, no solid actions have been conducted to secure the passage of the laws. Government spending on projects to improve electronic laws has been very low, only 25 Thousand JDs (US $40,000) were allocated for the Project **"The Modernisation of Communication Laws"** between the periods 2004-2006 (MoICT & MoPC, 2003). Currently the online e-Government transaction law and the law to enable an e-Signature have been halted because of the lack of funding (Mofleh, 2007). This continued delay in passing the required laws adds to the existing problems facing e-Government in Jordan which are:

1- e-Government in Jordan cannot move to the transaction or integrative level of services of e-Government.
2- EC and e-business activities are not developing in Jordan effecting the development of the e-Society.
3- People in Jordan do not trust the Internet and online activities. This will affect newcomers to using the Internet in Jordan in that they will also have the same perception of mistrust of the Internet.

MoICT Taking Control of e-Government: Website analysis showed a very weak online presence for government agencies with no authority taking action to resolve problems. Without a clear definition of required outputs from online government websites, allocating responsibilities and regular monitoring and feedback by the MoICT and within government agencies on the outputs of e-Government, problems will continue to accumulate and delivery will remain weak. The MoICT in Jordan must accept its responsibilities, monitor and regularly check the outputs of government agencies. Also MoICT must take the lead in coordinating different government agencies to bring standardisation of website layout at this stage which will build a successful platform for further development and integration between government agencies.

Concentrate on Informative Level of e-Government: Hu et al., (2005) established an e-Government project success appraisal model, shown in Figure 10.1. The first important variable of five variables which determine the success of an e-Government

project is information and service quality, which will lead to perceived usefulness of civil servants, enterprises and citizens and user satisfaction.

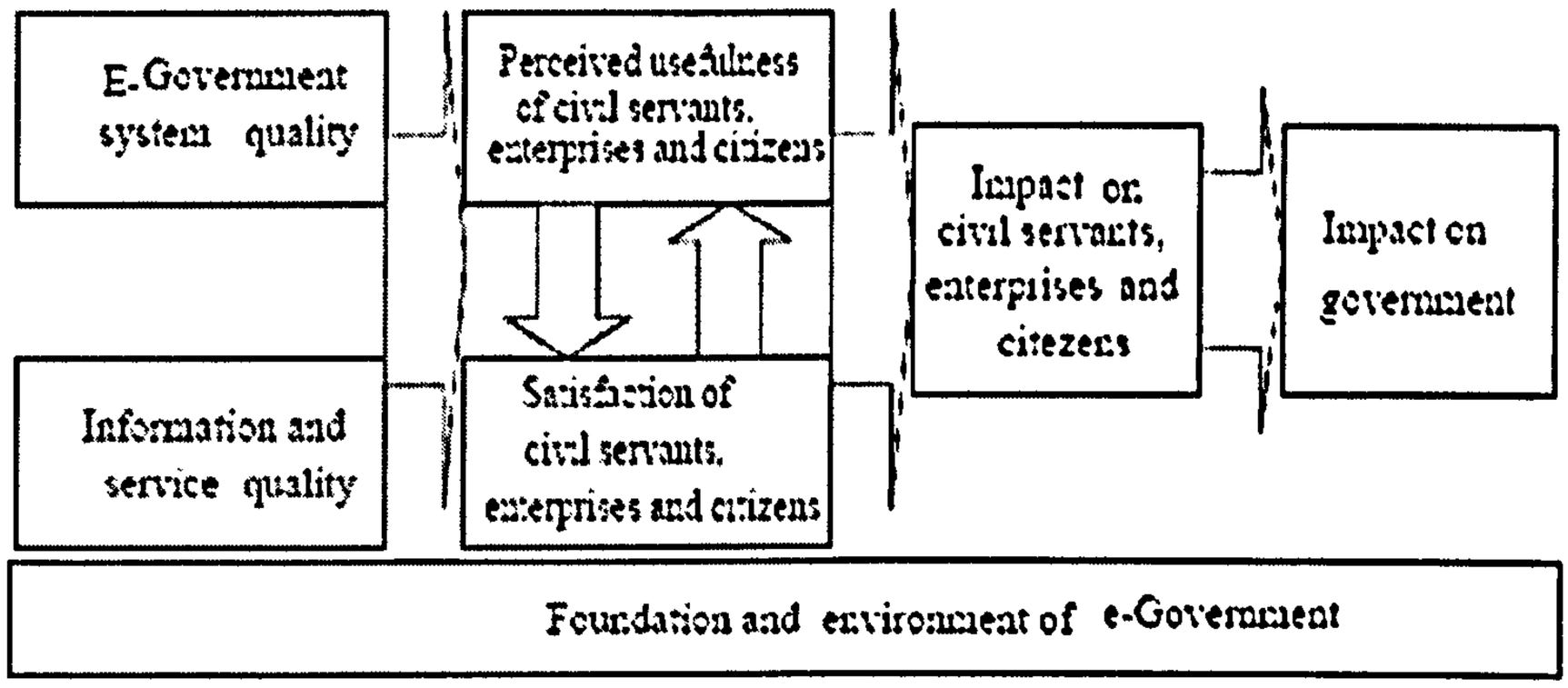


Figure 10.1: e-Government Project Success Appraisal Model. Hu et al., (2005)

The Jordanian Government has a weak online presence which is having negative effect on its credibility. People in Jordan have a higher demand for informative e-Government and in addition to this people are not technologically adaptable to transact online with government. The Jordanian Government must prioritise the information level of e-Government services at this stage. Ministries and Government agencies must have comprehensive up-to-date information on their websites, they must try to come together, have the same theme and interface to make it easier for people to get used to the Government online websites. Strong informative online e-Government at this stage has the following strengths:

- Responds to most of the e-Society needs and capabilities.
- Gives time to build a capable e-Society before making services available on line.
- Makes government focused on achievable goals considering cost, technology, expertise and time required.
- Gives time for government agencies to manage the required change for more developed stages of e-Government.
- Online presence does not require complicated integration between departments within an agency.

Transform in Stages: At the current stage the MoICT has a daunting task of satisfying plenty of requirements before being able to achieve the goal of full integration between government bodies to deliver seamless online services. MoICT must ensure the existence of required laws, services processes reengineering, employees training, e-Society bundling and other requirements which might had led to the confusion of prioritising needed requirements. e-Government at this stage seems a perplexing endless task of requirements. One solution for this situation is that e-Government transformation is planed in different stages. As previously discussed the information level must be the highest priority at this moment since it will respond to both people's needs and government capabilities. Once it has achieved an adequate online presence and the capacity to be online for a period of time, Government can start the process of shifting to more advanced levels of e-Government transformation. The new division of transformation to different stages through a specific period of time will enable government to identify priorities; will give government more time to resolve problems at each stage, in addition to understanding each stage's complications. Also stage transformation will reduce the impact of sudden change on employees and decision makers, it will give the Government the required time to connect people to the Internet, make them adapted to e-Government in longer time periods so that when government reaches integrated services there will be potential users for those services (Evans & Yen, 2006).

Involve all Government Head Officials: When speaking with managers within the public sector in Jordan one of them commented, "Although we hear a lot about the term of e-Government in our working environment, still there is no solid understanding about it, we can not really realize what it means and what is the goal of it. We just think it's a method of improving our current systems and updating our computers" (Al Shibly, 2007). One method to tackle resistance to e-Government change and deliver commitment within government agencies is by the involvement of all of the head government agencies in the e-Government projects. The e-Government concept and goal must be explained to them, the heads of agencies must be trained how to use ICT to become more familiar with it and they must also accept e-Government transformation as one of their responsibilities. In this way when implementing e-Government, resistance to change will be less if commitment is obtained from the head of the agency since he has the upper hand in most of the

decision making. Cecchini & Raina (2004) go on to say that "the local administrative and political actors need to be involved in the implementation of the project (e-Government), otherwise the likelihood of failure increases dramatically".

Create Inter and Cross Agency e-Government Coordination and Troubleshooting Teams: One method of solving the technical and managerial problems within different departments in government agencies is to create e-Government teams in each agency. Some of the teams will be allocated to solve managerial problems related to accountability, responsibility and finance of the projects between different departments in the agency. Other teams could be allocated for technical problems including system integration and knowledge sharing. These teams can resolve standing issues between different government departments that hinder the transformation and integration within a government agency. Similar teams can also be constructed to organize work between different agencies across the country to sustain wider levels of integration across different government agencies within the Jordanian Nation.

Flexible Information Architectures: Technology wise, since a number of parties are involved in the implementation of e-Government one solution to make system integration across government agencies easier in the future is to adopt flexible information architectures. The process of implementing this is carried out by defining specifications of minimal, but critical standards and interfaces that make it possible to exchange information between otherwise independent government agencies. Research shows that flexibility of information architecture enormously contributes to empowering the relationships between the participating organizations and the quality of their collaboration process (Bekkers, 2006).

Consolidating Online Presence with People's Needs: Government must make connecting to the Internet a value added process through delivering services responding to the Jordanian people's needs. Of course at this stage Government cannot deliver integrative and transitional services. What it can do is to come up with value added and demanded services that are on information level. Some examples of value added simple services can be:

1- Jordan's population has a large number of unemployed with unofficial figures estimating 30% among young people. Government can establish an online vacancies directory for jobs available at each ministry through establishing a government job website and branding it with the name of e-Government.

2-Jordan can launch an official website for Government publications. This website will be specialised in making available online all documents officially published by Government agencies. This project will have a huge appeal for students, government officials, reports and researchers.

Activate e-Government through Mobile (m-Government): Compared to the Internet, mobile phone connection in Jordan is very high and is one of the highest in the developing countries. There are four major providers of mobile services for a country with a population of around 6 million (Dutta et al., 2004; 2006). People responsible for e-Government have to consider introducing mobile phones as a medium to deliver services, since a large segment of the population are using them. Also people are compatible with mobile phones which make the intention to use them higher among citizens. Government can make use of the expertise of mobile service providers by making them involved in the e-Government project, where long term strategic alliances and mutual benefits can be obtained between Government and mobile service providers.

10.2.2 Recommendations for Addressing People's Needs

Part of this research was to understand what people needed in order to use e-Government and how government responded to these needs. Findings indicated that the Jordanian population has weak computer and Internet capability. The e-Society has medium levels of trust in the government, trust in the Internet and compatibility with online services. Awareness increased the probability that people would visit government websites and previous experience with e-Government affected the trust level on government. The Jordanian population generally had a low IU e-Government because of their needs not being addressed. The following recommendations could help the Jordanian Government to meet up with people's needs:

Promoting Jordanian Population Capability: Jordan at the moment has a low connection rate, low level of Internet users and very low PC ownership. Part of the new strategy must be to build a considerable e-Society by increasing their Internet and computer capability and their compatibility with it. Compatibility proved to be the most significant factor in determining people's intention to use e-Government. Unless the Jordanian population becomes familiar with the Internet, the intention to use e-Government services will be very low. Currently Jordan is concentrating on training deprived people how to use computers and develop their skills; furthermore Jordan is running extensive training programmes aimed to introduce employees to basic ICT ability. This must not be the major concern of Government. The Jordanian Government must think of methods to connect people online, make them buy computers and make computers part of their life style. This will make e-Governments services if they are to be delivered compatible with people which will lead to having a high demand on services. The following actions can be used to promote the e-Society in Jordan and increase compatibility with e-Government.

a- Making reasons for people to buy computes: As previously mentioned 89% of Jordanian families have a monthly income of less than US $1000 and 51% of Jordanian families have an income less than US $600. The average family size in Jordan is 5.4. This makes the process of buying a computer a costly Investment. However the Jordanian Government can take some steps forward to convince and help the Jordanian people to acquire a PC. These are:

- Teach computer subjects at all schools.
- Make computer literacy a requirement for employment.
- Dedicate an increase in salary for ICT skilled employees.
- Make computers a necessary tool for college and university education.
- Subsidise computer costs.
- Integrate computers and Internet with employees' jobs (i.e. e-mail, Paper Elimination Act)
- Government supporting affordable initiatives such as One Laptop per Child (OLPC), 100 dollars per laptop[25].

[25]OLPC will be applied in the following countries Brazil, Thailand, Egypt, Cambodia, Dominican Republic, Costa Rica, Tunisia, Argentina, Venezuela, Nigeria, Libya.

- Direct international aid to help people own a PC, since a big part of Jordan's e-Government depends on attracting aid taking in consideration that Jordanians population is not that big.

b-Connecting people to the Internet: Government should look for initiatives that will reduce Internet connection costs; the average cost for a broadband connection in the UK is about US $30 (Ovum, 2006), whereas in Jordan this figure is much higher, in addition to having a charge for activation fees (not forgetting the huge difference in income rate between Jordan and the UK) (Abu-Samaha & Abdel Samad, 2007).

. The survey showed that 83% of the e-Society in Jordan thought Internet prices are expensive. Some of the solutions could be:

- Country going wireless,[26] this could be completely or partly.
- Country regulator enforcing connection price reduction.
- Concentrating investments on infrastructure and connecting people.
- Trying to attract a large international communication company to compete with Jordan Telecom[27].
- Increasing Internet public access points in the country (national libraries, universities, schools and transport centres) and motivating businesses to participate in increasing the public access points.

c-Enabling EC activities in Jordan: Belanger & Carter (2004) highlights the importance of promoting EC and e-Business activities in countries in order to consume e-Government by stating:

> "Many cultures now embrace Internet technology in business (e-Commerce and e-business) and leisure (instant messaging and virtual communities). Citizens who've adopted these Internet-supported initiatives are likely to adopt state e-Government services as well. Citizens who have adopted e-Commerce initiatives can be expected to view e-Government initiatives as compatible with their lifestyle. E-Commerce adopters are comfortable searching for information and services, providing personal information and conducting transactions electronically. These citizens will have higher intentions to use e-Government services than those who view these services as incompatible with their lifestyle."

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[26] Macedonia was the first country to do so and was supported by USAID which is supporting the Jordanian e-Government

[27] Jordan Telecom (JT) is Jordan's only fixed-line service provider; its monopoly ended in the beginning of 2005, however the company remains without any competitors until this time (2007).

Jordan has to concentrate on enabling an EC atmosphere even if that means few companies and people are engaged in online activities. Enabling EC will be the first step forward for creating an e-Society capable of conducting transactions online. Government can activate and empower EC in Jordan by:

- Regulating EC laws before thinking of the complications of e-Government laws.
- Raise awareness on the effectiveness of creating e-Market places between industrial companies and service businesses in Jordan, to encourage the birth of online trade in Jordan.
- Jordan could establish laws that encourage the adoption of EC for business and people. Examples include less Sales Tax on online bought products.

d) Increasing investments on projects that will increase people's access capabilities: Financial figures of the Jordanian e-Government investments indicated that projects that would increase people's access to the Internet such as the project named "Wide Spread of Internet Services in Jordan" and other similar projects that would help citizens acquire a PC, almost lacked any funding, whereas projects that would deliver e-Services gained tens of millions of dollars in investment each year. The Jordanian Government should rebalance spending on e-Government so that projects that would enhance people's access receive a greater amount of financial support.

Promoting the Jordanian Population Compatibility with e-Government: Government, by empowering citizens' capability with e-Government, boosting EC and integrating ICT with employees' working methods, will eventually increase compatibility with e-Government services. Another important approach to increasing compatibility with e-Government is the design and layout of the online services themselves. Carter & Belanger (2005) for example suggests downloadable online forms should resemble paper forms that citizens are familiar with. Also agencies should agree to standard interfaces for their websites by having similar themes across agencies. This will help citizens to become compatible and familiar with online services when visiting a government website.

Trust in the Internet and Government: To overcome low trust in the Internet in Jordanian society, government must take steps to ensure that legislation is available for both EC and e-Government activities. However, government can start with legislating EC laws consider more complicated legislation that will enable e-Government activities. To boost perceptions of trust in government, agencies must convey to citizens that state government employees have both the desire (benevolence) and ability (competence) to provide citizen-centred information and services designed to meet their needs. Agencies can reassure citizens of the reliability of e-Services by including easily visible privacy statements on their sites and by increasing government website legitimacy dimension when designing their websites. Government should also supply accurate, timely and dependable services. If citizens have a positive experience with an e-Government service, they will be more likely to use the service. On the other hand a negative experience prompted by unavailability of service, erroneous information or a technical error which is experienced by the Jordanian population when interacting with e-Government, will have a reverse effect, discouraging adoption by that citizen and others (Carter & Belanger, 2005).

In more advanced stages government can launch and distribute documents to citizens on the role of e-Government services which contain pictures of employees who provide the services. This documentation could be provided both online and offline (Carter & Belanger, 2005). Also in the future the Jordanian Government could establish a Payment Gateway which will be a secure webpage so that all online transaction payments to government could be conducted through it. The Government could consider international private sector experience for implementation and operation of the Payment Gateway.

Involve User in the Design of Information of Services: A useful approach to boost the usability of the government websites and make them more responsive to citizens' needs could be by the involvement of representative users from the beginning of the design process of government agencies' websites (Stanziola, 2006). In Switzerland local some governments perform surveys on regularly (every number of years) to examine citizen perceptions on government services (Schedler & Summermatter, 2006). The Canadian government which is one of the most successful implementers of e-Government, regularly surveys citizens and businesses to examine their attitudes

and needs from e-Government (Reddick, 2005). The Jordanian Government could follow a similar approach to satisfy people's and businesses' needs. Other methods could include government creating study focus groups to gain deeper understanding of people's attitudes and needs.

10.3 Research Implications

Similar to Jordan, many developing countries are experiencing a comparable gap between government and people. Such countries usually have a low e-Readiness Index, they lack the essential ICT infrastructure and they have small e-societies. These countries will also have cultural barriers, which affect their e-Transformation. Most of these countries have adopted e-Government strategies and plans that were initiated in developed countries (that were involved in NPM management and where there has been a high demand for online services from an already existing e-Society). Consequently, these "imported" strategies rarely meet the requirements of either the government or people in developing countries. This, in turn, leads to a very slow progress in their electronic development projects as supported by earlier studies (West, 2002, 2003, 2004, 2005; Siau and Long, 2006).

Solutions to this problem will come from countries redefining their e-Government strategies to reflect the country's and citizens' real needs that are related to increasing internet access, starting with enhancing any existing e-Society. Governments should consider methods and invest in projects that will boost e-Business within the country and that will introduce ICT into its citizens. From the perspective of service levels, governments must bring about this transformation in stages and within an acceptable time frame concentrating on achieving low-level high value services at early stages. In this way, government will be able to focus on achievable levels of services that are more responsive to citizens' needs. As a consequence, persuading people to use these low levels of services will not be so difficult compared to persuading people to submit personal information or to make online payments. e-Transforming in stages will break the project up into discrete, achievable steps that would build upon each other in addition to providing time for developing countries to build up their e-societies so that, when achieved, they can adapt to and use e-Government services.

This study has identified Compatibility with e-Government, Trust in Internet and Trust in Government as significant variables that will increase citizens' demand on e-Government services. Governments must integrate citizens' needs to e-Government strategy and the process of service development in order to achieve maximum benefits from their e-Government promises.

10.4 Research Contributions

This research has developed knowledge in the area of e-Government in the following ways:

Firstly from the theoretical perspective the research identified the root origins of the concept of e-Government, understood how it was developed, why countries around the globe are implementing e-Government and how countries differ in their reasons for implementing e-Government which in turn affects its development (Dufner et al., 2002; Ebrahim & Irani, 2005; Heeks & Bailur, 2006). The division of countries into five main categories (Leaders, Followers, Opportunists, Leapfrog and Stars) could be the key factor in understanding distinctive e-Government literature which produces a number of experiences and e-Government problems without classifying the source of the information (Basu,, 2004; Siau & Long, 2006) .

Secondly the research presented an original developed contribution by creating a "Generic e-Government Implementation Model" on the national level. Researchers who have specialised in the field of e-Government highlight the necessity for the creation of such a model (Heeks & Bailur, 2006). Elements in the model have been produced based on previous e-Government literature that attempted to produce-Government models in addition to published e-Government case studies from all around the globe and feedback from e-Government academics was used to finalise and produce the Model. The model it self adds to the field of e-Government since it distinguishes between different aspects within published e-Government research. It divides the e-Government project into 6 different bodies (Drivers, Central Government, Agency e-Transformation, Technological Medium, Barriers and Outputs). The model also logically presents how the 6 different bodies interact with each other, explaining why and where elements are required. This has not been found in any previous e-Government literature. The model presents an excellent starting point for researchers and policy makers to gain a quick and comprehensive understanding of e-Government.

Thirdly the research investigated the Jordanian e-Society demand level and what was needed to adopt e-Government in Jordan. Such investigation came as a response to e-

Government researchers who raised the need for such investigation (Seifert & Petersen, 2002; Sealy, 2003; Reddick, 2005; Zhang et al., 2005; Tung & Rieck, 2005). Findings from the questionnaire revealed that e-Society in Jordan requires more informative e-Government services, in addition the e-Society lacks the trust in government and the Internet and requires more compatibility in order to consume e-Government services. This presented an original contribution which gave an insight into understanding people's adoption of e-Government in Jordan specifically and in the developing world generally.

Fourthly the research reviewed the implementation and the output of e-Government projects in Jordan by conducting document analysis which has not been executed in previous research. However, previous research has reviewed the implementation of e-Government based on qualitative methods using case study and observation research (Ciborra & Navarra, 2005; Ciborra, 2005), while other research explained the implementation of e-Government in Jordan (Al-Omari & Al-Omari, 2006; Al-Omari 2006). This research studied the implementation of e-Government in Jordan from a high level. Furthermore it identified major problems with the Jordanian e-Government implementation. The investigation as well, reviewed the whole e-Government project in Jordan and was not limited to one or two IT projects. Although most requirements and solutions for identified problems are listed in the Jordanian Government publications as being part of the e-Government implementation process (i.e. the need for laws and legislation), no sufficient actions have been taken to execute these requirements. The government does not seem to recognize what the priorities are at the moment to achieve better implementation, cost effectiveness and response to the citizens' and business's needs from e-Government. Identifying priorities is considered to be a contribution since it will be helpful to the Jordanian Government for better implementation of e-Government.

Fifthly the research examined the delivery of Jordanian e-Government services. Although there have been some studies that examined the Jordanian Government service delivery (UNPAN 2004; 2005) no study examined in detail the Jordanian Government service delivery. Usability analysis examined government websites from the following six different areas a) online services, (b) user-help, (c) navigability d) legitimacy, (e) information architecture and (f) accessibility accommodations. Results

revealed problems with the construction of the Jordanian Government websites, indicating a lack of understanding of basic standards to deliver well constructed e-Government services. This lack of knowledge has been identified both within central government and government agencies.

Finally the research itself found that in Jordan there is an existing gap between government and people on e-Government. The procedure of investigating this gap is also considered to be a response to the calls of many researchers for such research (Lee-Kelley & Kolsaker, 2004; Reddick, 2004, Welch et al., 2005). Findings indicated that people require low level services, while the government is trying to achieve high level services. Also people have other requirements before they can implement e-Government. However the current e-Government website completely ignores those needs and in fact current e-Government delivery contributes to widening the existing gap between people and Government. This finding could hold the key element in achieving better e-Government delivery and implementation, where Jordan can modify its implementation of e-Government for better output.

10.5 Limitations of the Research:

The major limitation of this research is the infancy of e-Government research. As explained in Chapter 2, e-Government is a relatively new research field therefore the concepts with which scientists inspect this new phenomenon are not completely developed. Even the definition of the e-Government concept is not universally acknowledged, since new technological developments such as wireless and mobile technologies force the concept to be more inclusive and dynamic in nature. Therefore, this study used grounded research to develop new and useful categories of variables and theories. However, the research minimised the effect of this limitation by conducting an extensive review of the e-Government concept and its origins. Also the research constructed a generic e-Government model to cover most aspects related to e-Government and its implementation.

When assessing the demand side of e-Government services and identifying factors influencing its adoption, the survey was directed towards Internet users only findings obtained from the e-Society can be generalised to be similar to the non e-Society adding to them the access and skill capability requirement (Reddick, 2005). However, one can argue that people who are not Internet users if IT empowered with may have different demand levels and requirements in order to adopt e-Government services than the existing e-Society. Another limitation when studying variables influencing the demand level of e-Government is that hypothesised variables have been based on previous research and also on previous researchers' understanding of e-Government. Therefore there might be a chance of some variables influencing the adoption of e-Government which are not included in the hypothesis.

When measuring the supply and the implementation of the Jordanian e-Government based on document analysis, website analysis a limitation might be that there is a growing debate in e-Government research that such methods might not be effective since they observe and analyse e-Government from the outside without being actually involved in the process of e-Government which might hold significant unapparent problems (Heeks & Bailur, 2006). Some researchers (Scholl, 2005) refer to this phenomenon as **"The Iceberg Phenomena of e-Government Research"** shown in figure 10.2.

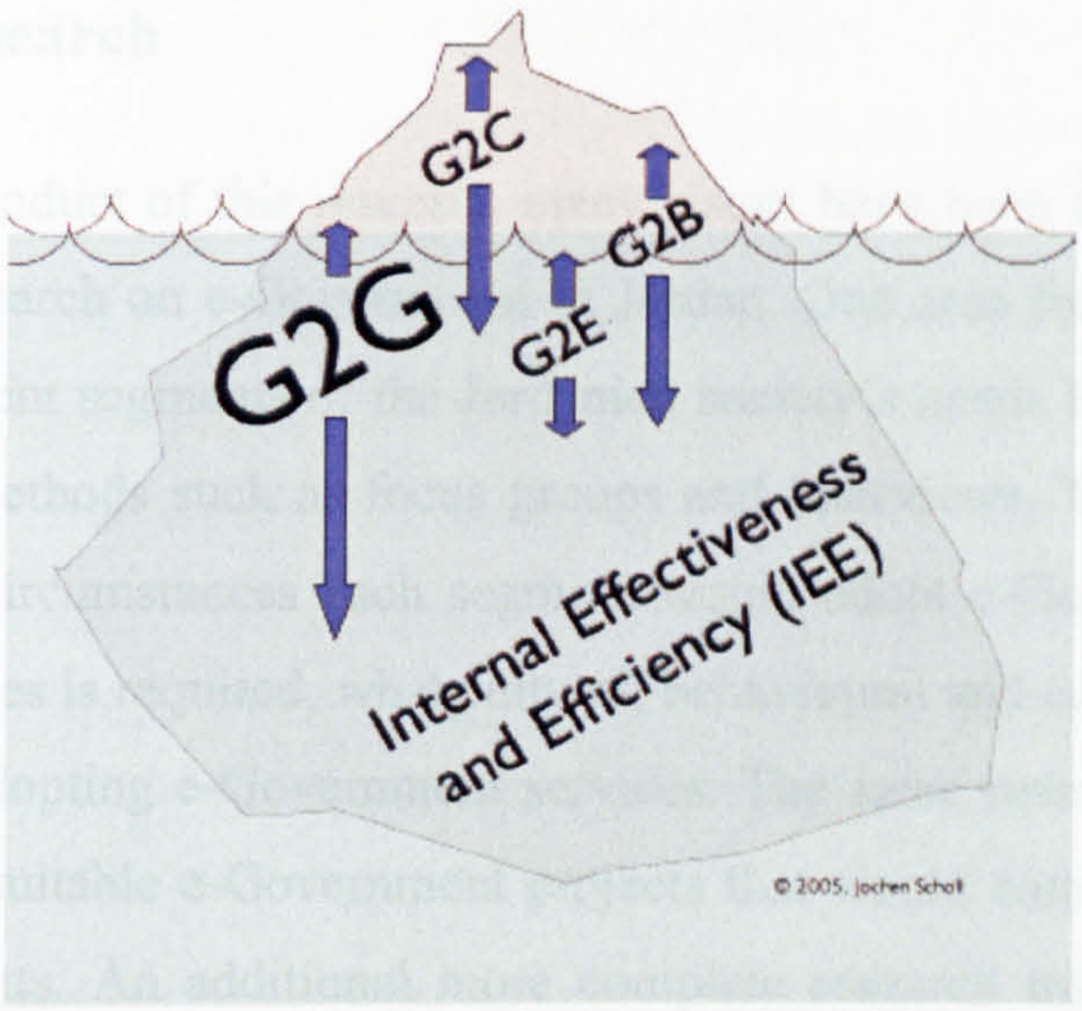

Figure 10.2: The Iceberg Phenomena of e-Government Research. Scholl (2005)

In this research the effect of the Iceberg Phenomena is reduced by the inclusion of secondary data obtained from published e-Government material related to Jordan that was constructed on qualitative methods using observation and case study research in addition integrating them with website analysis which has led to the decrease of the effect of this limitation. Also the conducted interviews with Jordanian officials to discuss research findings added an insight to what is happening internally within the e-Government project which decreases the Iceberg Phenomena effect. Furthermore, since the research focuses on major and strategic problems related to the adoption and the implementation of e-Government which has affected the adequacy of its supply, there is no need to go into detail in specific technical and organisational problems facing e-Government.

The final limitation of this study is that of external validity or generalizability of findings. While this study's findings (the Gap between Government and people) may not be generalized to the broader population of e-Government projects in the developed world, generalization is possible to countries with similar profiles to Jordan. Also parts of the research such as the generic e-Government adoption model could be generalised globally.

10.6 Future Research

Through out the conduct of this research many issues have been found that could be used for future research on e-Government in Jordan. One area for research could be investigating different segments of the Jordanian society's needs from e-Government using qualitative methods such as focus groups and interviews. The research would identify in which circumstances each segment would adopt e-Government services, what level of services is required, what cultural, behavioural and economic factors are more decisive in adopting e-Government services. The same research could identify what are the most suitable e-Government projects that would comply with the needs of different segments. An additional more complete research might study the cost effectiveness of the best e-Government projects that would achieve maximum benefits and consumption by citizens, in response to focus groups findings so that government agencies could introduce e-Government projects that would appeal to the whole population or to targeted segments within the society. One interesting area for future research would be the study of best methods and approaches to empower non Internet users in Jordan. Costs, time, acceptance would be evaluated and the same research would identify which segments can be more effectively empowered.

An alternative research could investigate the introduction of new technological channels such as mobile phones, or even the use of normal telephone, the introduction of governmental call centres and even simple regular post to deliver government services to citizens, which might be the first step in organising public sector work in a way that does not require complicated ICT systems and investments. Ways that would dramatically restructure back and front office structure in such a way that management can reorganise their process to cope with the new delivery methods without the need to automate public sector process online. The study would also investigate the appeal of the introduction of such interaction channels between citizens and government.

In relation to the implementation of e-Government projects within the Jordanian public sector, future research can investigate the most appropriate methods for introducing ICT and adopting it within the Jordanian employees' working environment, it could cover how to introduce it in different stages, the time required

for each stage and how to make the working environment more integrated with new working methods. Other research could focus on best methods and procedures to re-engineer government services so that they could be delivered online, in addition to identifying what are the most appropriate types of services that could be virtually delivered. Future research can also investigate best methods that could enable government departments' integration, facilitating knowledge sharing within similar and different public sector departments and agencies including the military. This could be investigated from different perspectives including technical, organisational and cultural.

With regards to ICT and its role in the countries development future research could conduct a major review on developing countries and emerging economies classifying them to countries which have achieved the most sustainable economic growth, following that identifying which of them have adopted major successful ICT initiatives that have contributed to their success, from there researchers can focus on ICT grounds, strategies, plans and best practises that helped these counties to satisfy developmental objectives so that other countries could share their experiences. For the Jordanian case future research could focus on successful IT based projects within different ICT initiatives and try to understands the reasons why such projects have been successful compared with others other project which might be helpful when deploying future ICT strategies and projects.

10.6 Conclusion

Most governments around the world are deploying e-Government projects for different reasons. Jordan started its e-Government project in the year 2000 hoping to achieve social and economic development in what seemed a straightforward implementable project. e-Government proved to be a complicated project that needs many resources. e-Government in Jordan faces challenges that do not arise from hardware and software engineering issues, but from the features of existing social and administrative regimes which cannot be easily re-engineered to accommodate the evolving networked digital environment of the state model wished for by e-Government optimists. The development of the systems, networks and infrastructure necessary to make e-Government work requires the re-alignment not only of the 'government', but also of the social and cultural frameworks of the state. In order to achieve better e-Government transformation governments should assess people's demand and needs from e-Government when starting a national e-Government strategy. The strategy also must be realistic reflecting acceptable levels of transformation attuned to the country's resources and compatibility with ICT. The implementation of e-Government must be executed in stages and within an acceptable level of time that would respond to both social and cultural changes brought by e-Government.

The findings of this research confirmed suggestions by different e-Government researchers who debated the fact that governments generally assume that people require it, whereas in reality the majority of the population do not need it. Findings also indicated that the Jordanian Government seems to neglect many of the people's needs when implementing e-Government and delivering services online. While most developing countries around the world deploying e-Government projects with the hope to achieve advanced levels of e-Government services within short time periods (Siau & Long, 2006), governments may have to reconsider their objectives and try to first achieve high value informative levels of e-Government services creating an effective interaction channel with citizens and establishing good relationships through it before moving to more advanced levels of online services. With regard to citizens' needs although they seem obvious to most e-Government experts, most governments fail to satisfy citizens' needs rather concentrating on technicalities (computer and

internet access for their citizens). As a result discussions on the general lack of e-Government usage have primarily focused on the ''digital divide'' rather than social or behavioral reasons (peoples' needs) that might cause people not to access and use e-Government (Jaeger & Thompson, 2004).

This study has identified Compatibility with e-Government, Trust in Internet and Trust in Government as significant variables that will increase citizens' demand on e-Government services. Unless governments understand people's needs from e-Government and reflect it in their national ICT strategy and in services delivered by governments to people there will be an existing gap between governments and people on e-Government affecting the quality of its online delivery. Developing countries implementing e-Government should also think of methods and invest in projects that would boost EC and e-Business activities before trying to achieve advanced levels of e-Government. This will give them the chance to empower their citizens towards being adaptable to e-Government.

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Appendix 1

A) Interviewed e-Government expertise

	Name	Venue	Date
1	Professor. Paul Beynon- Davies	**Cardiff University**	31/01/2006
2	Dr. Bernd Carsten Stahl	**De Montfort University**	05/12/2005
3	Mrs. Radmila Juric	**University of Westminster**	30/11/2005
4	Dr. Liz Lee-Kelley	**Surry University**	21/11/2005

B) Questions asked through the interview

Table1: Interviews Questions

Question Number	Question
Q1	What is your comment on the argument that states "e-Government is not a well defined multidisciplinary topic"?
Q2	Do you support the argument that states "There is no existing comprehensive model of e-Government"?
Q3	Do you find the proposed model easy to understand?
Q4	What parameters are missing in the model?
Q5	What is your general observation concerning the evolution of the model?
Q6	From the area of your expertise what are the hot topics in relation to e-Government research?
Q7	Different questions.

D) Contacted e-Government experts

	Expert Name	Institution	e-Mail
1	Professor Zahir Irani	Brunel University	zahir.irani@brunel.ac.uk
2	Trevor Wood-Harper1	University of Manchester	T.Wood-harper@manchester.ac.uk

3	Royal Holloway	University of London	andrew.chadwick@rhul.ac.uk
4	Julian Padget	University of Bath	jap@maths.bath.ac.uk
5	Dr George Kuk	University of Nottingham	George.Kuk@nottingham.ac.uk
6	Professor. Paul Beynon-Davies	University of Wales Swansea	p.beynon-davies@swan.ac.uk
7	Professor George Cairns	University of Essex	gcairns@essex.ac.uk
8	Mark Thompson	University of Cambridge	m.thompson@jbs.cam.ac.uk
9	Dr Marinos Themistocleous	Brunel University	marinos.themistocleous@brunel.ac.uk
10	Professor Tony Bovaird	University of West of England	tony.bovaird@uwe.ac.uk
11	Dr. Elke Löffler	University of West of England	elke.loeffler@govint.org
12	Dr Adrienne Muir	Loughborough University	A.Muir@lboro.ac.uk
13	Prof Charles Oppenheim	Loughborough University	C.Oppenheim@lboro.ac.uk
14	Dr Jyoti Choudrie	Brunel University	jyoti.choudrie@brunel.ac.uk
15	Dr Vishanth Weerakkody	Brunel University	vishanth.weerakkody@brunel.ac.uk
16	Simon Lambert	Business and Information Technology Department	S.C.Lambert@rl.ac.uk
17	Alvaro Arenas	Business and Information Technology Department	A.E.Arenas@rl.ac.uk
18	Radmila Juric	University of Westminster	juricr@wmin.ac.uk
19	Dr Jasna Kuljis	Brunel University	jasna.kuljis@brunel.ac.uk
20	Dr Tony Elliman	Brunel University	tony.elliman@brunel.ac.uk
21	Dr George Ghinea	Brunel University	george.ghinea@brunel.ac.uk

22	John Borras	e-Government Unit, Cabinet Office, London	john.borras@c-envoy.gsi.gov.uk
23	Lee Anthony Eddowes	University of Manchester Institute of Science and Technology	L.Eddowes@postgrad.umist.ac.uk
24	Dr Shirin Madon	London School of Economics	s.madon@lse.ac.uk
25	Professor Les Worrall	University of Wolverhampton	bu1996@wbs.wlv.ac.uk
26	Ann Brown	City University	A.P.Brown@city.ac.uk
27	Prof Leela Damodaran	Loughborough University	l.damodaran@lboro.ac.uk
28	Andy Dearden	Sheffield Hallam University	A.M.Dearden@shu.ac.uk
29	Dr Jenny Gilbert	Anglia Ruskin University	j.gilbert@anglia.ac.uk
30	Professor Chris Hudson	Buckinghamshire Chilterns University College	chris.hudson@bcuc.ac.uk
31	Gregory Maniatopoulos	University of Newcastle upon Tyne can	gregory.maniatopoulos@ncl.ac.uk
32	Prof. Ian McLoughlin	University of Newcastle upon Tyne can	hos-unbs@ncl.ac.uk
33	Dr .Bernd Stahl	De Montfort University	bstahl@dmu.ac.uk
34	Dr Puay Tan	Sussex University	P.Tang@sussex.ac.uk
35	Dr. Mark Stubbs	Manchester Metropolitan University	m.stubbs@mmu.ac.uk
36	Dr Konstantinos Nikolopoulos	Lancaster University	k.nikolopoulos@lancaster.ac.uk
37	Liz Lee-Kelley	University of Surry	L.Lee-Kelley@surrey.ac.uk
38	Professor Richard Vidgen	University of Bath	R.T.Vidgen@bath.ac.uk
39	Andy Powell	University of Bath	a.powell@ukoln.ac.uk
40	Dr Mark Xu	University of Portsmouth	mark.xu@port.ac.uk

41	Professor Helen Margetts	University College London	Helen.Margetts@oii.ox.ac.uk
42	Professor Patrick Dunleavy	London School of Economics	p.dunleavy@lsc.ac.uk
43	Martin Ferguson	The University of Birmingham	m.ferguson.1@bham.ac.uk
44	Dr. Barbara Ann C. Allen	The University of Birmingham	b.a.allen@bham.ac.uk

Appendix 2

A) Cover Letter of the Online Questionnaire Survey

Dear Respondent,

I am inviting you to participate in a research that investigates the responsiveness of government online services to citizens needs. This research project is for the requirements of a Doctorate degree at The University of Bristol, England.

If you are a Jordanian citizen or have lived in Jordan and wish to precede the next questionnaire contains a variety of questions covering:

0. General Personal Information
1. Your Computer and Internet Skills
2. Exercises with Jordan's Governmental Websites
3. Perception on Internet and public services

The survey should take you about 12 minutes to complete. Through your participation I hope to understand what type of service government websites should deliver to citizens in Jordan and how could they improve their websites to increase citizen's use of online services.

I do not know of any risks to you if you decide to participate in this survey and I guarantee that your submitted data will not have any indicator to revealing your identity. I promise not to share any information that identifies you with anyone outside my research group which consists of me and my research supervisor. Your participation is voluntary and there is no penalty if you do not participate.

Thank you for taking the time to complete this questionnaire.

Sincerely.

Samer Mofleh.

B) Online Questionnaire Survey

1. Age

❑ Less than 18 years ❑ 18-24 Years ❑ 25-34 Years ❑ 35-50 Years ❑ Over 50 years

2. Gender

❑ Female ❑ Male

3. Education

❑ High school ❑ Collage ❑ University ❑ Postgraduate

❑ Other education

4. Occupation

❑ Student ❑ Private sector employee ❑ Public sector employee ❑ Self employed ❑ Non

5. Place of residence

❑ Jordan-Amman ❑ Jordan-other city or town ❑ Other Arab country ❑ Other country

6. Are you a Jordanian?

❑ I am a Jordanian ❑ I am Not a Jordanian but I live in Jordan

❑ I am not a Jordanian but I used to live in Jordan ❑ I am not a Jordanian and have not lived in Jordan

7. How often you use the Internet

❑ Daily ❑ Weekly ❑ Monthly ❑ Rarely

8. For how long have you been using the Internet?

❑ Less than 1 year ❑ 1-3 Years ❑ 3-6 Years ❑ More than 6 years

9. You access the Internet at:

❑ Home and work ❑ Home only ❑ Work only ❑ Other

10. Internet charges in Jordan are

❑ Very expensive ❑ Expensive ❑ Natural ❑ Cheap

❑Very cheap

11. Do you own a personal Credit Card?

❑ yes ❑ No

12. Did you know that Government ministries and agencies offer online information?

❑ Yes ❑ Possibly yes ❑ Not sure ❑ Possibly no ❑ No

13. Have you heard about e-Government?

❑ Yes ❑ Possibly yes ❑ Not sure ❑ Possibly no ❑ No

14. Have you heard about the Jordanian e-Government Initiative?

❑ Yes ❑ Possibly yes ❑ Not sure ❑ Possibly no ❑ No

15. If a service of Tax Payment and Official Document Renewal was available online through a government website; would you use this website to:

	Yes	Possibly Yes	Not Sure	Possibly no	No
Gather information about service	❑	❑	❑	❑	❑
Use the email for any inquires about this service	❑	❑	❑	❑	❑
Provide personal information online if needed	❑	❑	❑	❑	❑
Make online payments for this service	❑	❑	❑	❑	❑

16. Do you think that using online Government services would

	Yes	Possibly yes	Not Sure	Possibly no	No
Fit with the way you like to gather information	❑	❑	❑	❑	❑
Fit with the way you like to pay for government services	❑	❑	❑	❑	❑
Fit well with your life style in general	❑	❑	❑	❑	❑

17. Would you prefer to make a personal visit to the relevant government agencies instead of using the following online?

	Yes	Possibly yes	Not Sure	Possibly no	No
Get information about Tax or Document Renewal	❑	❑	❑	❑	❑
Pay Tax or fees for Document Renewal	❑	❑	❑	❑	❑

18. When using an Online Government service, I think that the Public Sector:

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Will be able to successfully handle my payment	❑	❑	❑	❑	❑
Can be trusted to conduct the service	❑	❑	❑	❑	❑
Will keep my best interest on mind	❑	❑	❑	❑	❑
Can be trusted with online payments	❑	❑	❑	❑	❑

19. When using online services, I think that:

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Internet is safe environment	❑	❑	❑	❑	❑
Laws and regulations provide enough protection to users	❑	❑	❑	❑	❑
Online payments are secure	❑	❑	❑	❑	❑

20. Have you ever visited a Government Website?

❑ yes ❑ No

21. Compared with all other websites that you have visited, Government websites are:

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Easy to use	❑	❑	❑	❑	❑
Useful	❑	❑	❑	❑	❑
Reliable	❑	❑	❑	❑	❑
Regularly Updated	❑	❑	❑	❑	❑

e- Government is defined as "e-Government refers to such links and processes that by using modern network communication and computer technology, the government simplifies, optimizes, integrates and recombines governmental management function and service function and then operates them on the network, which can break the limitation of temporal, spatial and organization separation to raise governmental efficiency and offer a efficient, excellent and uncorrupted service for the public".

22. Do you Support the implementation of e-Government in Jordan

❑ Yes ❑ Possibly yes ❑ Not sure ❑ Possibly no ❑ No

23 Do you think that e-Government will work in Jordan?

❑ Yes ❑ Possibly yes ❑ Not sure ❑ Possibly no ❑ No

Appendix 3

A) Variables statistics

IU Variable

Iteam	Mean	Stand. Dev.	Stand. Error	*N*
Gather info online	3.67	1.444	0.048	649
Send an e-Mail	3.2	1.575	0.050	653
Provide personal info	2.67	1.472	0.055	651
Pay online	2.49	1.478	0.051	655

Av =3.1925 **Av** =1.567

Trust in the Internet Variable

Iteam	Mean	Stand. Dev.	Stand. Error	*N*
Internet is Safe	2.68	1.206	0.050	651
Payments are Safe	2.49	1.239	0.049	656
Lows Protect Me	2.53	1.246	0.051	658

Av =2.6 **Av** =1.23

Trust in the Government Variable

Iteam	Mean	Stand. Dev.	Stand. Error	*N*
Handle Payment	2.91	1.279	0.050	649
Trusted (with service)	2.8	1.284	0.049	651
Keep my best Interest	2.76	1.336	0.051	646
Trusted (With Payment online)	2.65	1.346	0.052	651

Av =2.78 **Av** =1.311

Previous Experience Variable

Iteam	Mean	Stand. Dev.	Stand. Error	*N*
Easy To Use	2.98	1.223	0.054	494
Useful	2.97	1.246	0.054	495
Reliable	2.63	1.263	0.056	493
Regularly Updated	2.33	1.239	0.056	493

Av 2.73 **Av** =1.24275

Awareness Variable

Iteam	Mean	Stand. Dev.	Stand. Error	*N*
Awareness of Gov websites	3.85	1.232	0.049	655
Heard about e-Government	3.73	1.485	0.057	658
Heard about Jordanian e-Gov	2.96	1.599	0.063	643

Av =3.51 **Av** =1.438667

Compatibility Variable

Iteam	Mean	Stand. Dev.	Stand. Error	*N*
Fit Gathering Info	4.04	1.283	0.048	653
Fit Life Style	3.91	1.316	0.054	650
Fit Payment	3.56	1.461	0.061	648

Av =3.83 **Av** =1.353333

Appendix 4

A) t-Test testing the relation between awareness and having visited government websites

One-Sample Statistics

Have You Visited Government Websites before?		N	Mean	Std. Deviation	Std. Error Mean
Yes	Awareness	481	3.8011	1.12194	.05116
No	Awareness	162	2.8560	1.27830	.10043

One-Sample Test

	Have You Visited Gov. websites before						
		t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
						Lower	Upper
Yes	Awareness	15.660	480	.000	.80111	.7006	.9016
No	Awareness	-1.434	161	.153	-.14403	-.3424	.0543

B) t-Test testing the IU relation with Internet Access (Capablity)

One-Sample Statistics

Internet Access		N	Mean	Std. Deviation	Std. Error Mean
	IU	4	3.6250	.92421	.46211
Home and work	IU	392	4.0281	.99126	.05007
Home only	IU	86	3.1453	1.33750	.14423
Work only	IU	115	3.2587	1.32616	.12366
other	IU	32	1.4453	.56345	.09961

One-Sample Test

Internet Access		Test Value = 0					
		t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
						Lower	Upper
.	IU	7.845	3	.004	3.62500	2.1544	5.0956
Home and work	IU	80.455	391	.000	4.02806	3.9296	4.1265
Home only	IU	21.808	85	.000	3.14535	2.8586	3.4321
Work only	IU	26.351	114	.000	3.25870	3.0137	3.5037
other	IU	14.510	31	.000	1.44531	1.2422	1.6485

C) Liner Regression analysis result between Trust in the government (Dependent) and previous experience with e-Government (independent).

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.692(a)	.479	.478	.71453822

a Predictors: (Constant), REGR factor score 2 for analysis 1

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	207.365	1	207.365	406.149	.000(a)
	Residual	225.159	441	.511		
	Total	432.524	442			

a Predictors: (Constant), REGR factor score 2 for analysis 1
b Dependent Variable: REGR factor score 1 for analysis 1

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.004	.034		.132	.895
	REGR factor score 2 for analysis 1	.688	.034	.692	20.153	.000

a Dependent Variable: REGR factor score 1 for analysis 1

Appendix 5

A) The 30 government websites have been analysed.

Public Sector Body	Website
1. Prime Ministry and Ministry of Defence	http://www.pm.gov.jo
2. Ministry of Finance.	http://www.mof.gov.jo
3. Ministry of Foreign affairs	http://www.mfa.gov.jo
4. Ministry of Municipal Affairs	No Website
5. Minister of Interior	http://www.moi.gov.jo
6. Ministry of Public Works and Housing	http://www.mpwh.gov.jo
7. Ministry of Education and Higher Education and Scientific Research	http://www.moe.gov.jo http://www.mohe.gov.jo
8. Ministry of Justice	Disabled (No Website)
9. Ministry of Energy	http://www.memr.gov.jo
10. Mini stry of Health	http://www.moh.gov.jo
11. Mini stry of Transport	http://www.mot.gov.jo
12. Mini stry of Industry and Commerce	http://www.mit.gov.jo
13. Mini stry of Planning	http://www.mop.gov.jo
14. Mini stry of Environment	http://www.moenv.gov.jo
15. Mini stry of Labour	http://www.mol.gov.jo
16. Mini stry of Developing Public Sector.	http://www.adm.gov.jo http://www.mopsd.gov.jo
17. Mini stry of Awqaf and Islamic Affairs.	http://www.awqaf.gov.jo
18. Mini stry of Water and Irrigation.	http://www.mwi.gov.jo
19. Mini stry of Agriculture.	http://www.moa.gov.jo
20. Mini stry of Culture	http://www.culture.gov.jo
21. Mini stry of Polotical Development and Ministry of Parliamentary Affairs	http://www.mopd.gov.jo
22. Mini ster of Social Development.	http://www.mosd.gov.jo
23. Mini stry of Tourism and Antiquities	http://www.mota.gov.jo
24. Mini stry of Telecommunications	http://www.moict.gov.jo
25. Depart ment of Income and Sale	http://www.incometax.gov.jo
26. Depart ment of Land and Survey	http://www.dls.gov.jo
27. A mman City	http://www.ammancity.gov.jo
28. Zarqa Cit y	http://www.zm.gov.jo
29. Irbid City	http://www.irbid.gov.jo/
30. Salt Cit y	http://www.salt.gov.jo

B) Conceptual and operational definition of website usability dimensions.

1) Online services

Conceptual definition: Online services refer to providing something needed or desired from a governmental entity to citizens, businesses, or other governmental entities by contacting an e-government website online.

Operational definition: Online services refer to providing something needed or desired from a governmental entity to citizens, businesses, or other governmental entities through an electronic interaction between a user and an e-government website 24 hours a day, seven days per week, via the Internet. Examples of generic services and service provision mechanisms include basic information, documents, downloadable forms, and e-commerce applications.

2) User-help

Conceptual definition: User-help refers to tools, or mechanisms that facilitate satisfactory website electronic contact and interaction.

Operational definition: User-help refers to e-government website mechanisms that facilitate satisfactory, general electronic contact and interaction to assist users to find services needed or desired from a website. User-help tools are not to be confused with navigation features in as much as they represent general instructional user guidance about how to move within the website. Examples of user-help tools include search, e-mail, foreign language, and an index.

3) Navigation

Conceptual definition: Navigation features relate to aids specifically designed to allow the user to steer though websites readily.

Operational definition: Navigation features relate to aids specifically designed to allow the user to steer through an e-government website readily. These features differ from user-help tools in that navigation features specifically identify quick routes to services that users want most. Examples of navigation features include links to high demand e-government services, links to other agencies, links to contact information and chat areas/message boards.

4) Legitimacy

Conceptual definition: Legitimacy characteristics refer to features that reassure users that a particular website is authentic and ready to conduct service transactions

Operational definition: Legitimacy characteristics refer to features that reassure users that a particular e-government website is legitimate. They provide credible evidence that an e-government website is an official venue for seeking service from a particular governmental entity. Examples of legitimacy characteristics include a security policy, privacy policy, webmaster contact information, and authentication devices.

5) Information architecture

Conceptual definition: Information architecture refers to devices that illustrate the structure, or organization, and presentation of a website.

Operational definition: Information architecture refers to devices that illustrate the structure, or organization, and presentation of an e-government website this specifically keys off how the information is first presented on the home page but is important throughout the website .Examples of information architecture include the use of branding, structure, and metaphors, topics/issues, and the ability to personalize/customize.

6) Accessibility accommodations

Conceptual definition: Accessibility accommodations refer to mechanisms that address the needs of the disabled.

Operational definition: Accessibility accommodations refer to e-Government website mechanisms that address the needs of the disabled. These mechanisms are not to be confused with accessibility of the Internet, which is associated with the digital divide concerns. The most universal accessibility accommodations' example is the "Bobby" compliant status of an e-government website. This represents a disabled-accessibility determination of an e-government website by a non-profit, third party specializing in

Source Barker (2004) Page (93-96)

C) Conceptual and operational definitions for variables within 6 dimensions

1) Online services: conceptual and operational definitions of variables.

Variable	Conceptual Definition	Operational Definition
Basic information	Elementary data	Elementary data identifying website and host agency
Documents/publications	Printable material	Official printable material from host agency
with officials	Contact information	contact information for elected and management individuals responsible for agency
Downloadable forms	Printable forms	Printable on user demand for official business
EC application	Transactional business capabilities	Individual commerce and citizen transactional
Interactive forms	Online access to public databases	Online access to public databases on demand
Interactive databases	Online access to public databases	Online access to public databases on demand
Multimedia applications	Online access to multimedia application(s)	Online access to videos, or audio clips on demand
Chat areas/message boards	Public areas for online information and discussion	Oriented/ organized around a common interest
E-mail updates/listserv	E-mail update service for user interest items	Registration for e-mail update service for user interest items
Employment information	Online access to public job information	Online access to public job information on demand

2) User-help: conceptual and operational definitions of variables.

Variable	Conceptual Definition	Operational Definition
About the site	Elementary data link about the site	Elementary data identifying website and host agency
E-mail us	Site help	Official printable material from host agency
Feedback	Comment link	contact information for elected and management individuals responsible for agency
Foreign language	Translation feature	Translation site version(s) for non-native users
Search	Content locator	Specific site content locator
Personal digital asst/wireless	Mobile Internet Device	Mobile Internet device access capability
Index	Alpha information listing	Novice oriented, site alpha information listing

3) Navigation: conceptual and operational definitions of variables.

Variable	Conceptual Definition	Operational Definition
E-government service	Web-enable government services	Web-enabled government services ranging from information to complex business transactions
Link to other agencies expedite	Facility to expedite contact with other agencies	User oriented facility to contact with other agencies (other than the host agency) for user convenience
Link to contact information	Links to contact host agency readily	User oriented links to contact host agency readily (e.g., phone postal mail, e-mail)
Chat areas/message boards	User venues for real-time communication and via messages	User venue(s) for real-time communication, oriented/organized around a common interest

4) Legitimacy: conceptual and operational definitions of variables.

Variable	Conceptual Definition	Operational Definition
E-government service	Host agency contact information	Agency contact information to reassure site authenticity
Disclaimer statements	Site information	Exacting site information informing users what the site is and is not about
	Links to contact host agency readily	User oriented links to contact host agency readily (e.g., phone, pc mail, e-mail)
Privacy policy	Personal information use statement	Agency personal information use statement, addresses data sharing and anonymity issues
Security policy	Technology assets protection statement	Agency technology assets protection statement, includes acceptable policy for employees
Authentication devices	Mechanism to determine/ verify identity	Agency mechanisms identity to determine/ verify identity and: of message
Webmaster contact	Site manager communication	Agency mechanism for site manager communication

5) Accessibility Accommodations: conceptual & operational definitions of variables.

Variable	Conceptual Definition	Operational Definition
Bobby compliance	Accessibility test	Accessibility test to determine design errors that prevent disabled access
Text telephone	Keyboard equipped telephone for disabled message communication	Agency mechanism to communicate with key-board equipped telephone message communication to ensure disabled access

D) Information Architecture: conceptual and operational definitions of variables

Variable	Conceptual Definition	Operational Definition
Audience-focused	User orientation	User-focused orientation, targeted to novice users
Agency/departments	Organizational units' listing	Agency organizational units' listing
Personalized/customizable	Mechanisms to tailor site to user preferences	Agency convenience mechanisms to tailor site to user preferences
Services	Organizational functions	Agency organizational functions identified for novice user
Branch of government	Organizational label classification (i.e., county)	Agency's proper public entity classification (i.e., county)
Branding/structure/metaphor	Publicly distinguishable identity communication	Publicly distinguishable, identity communication (i.e., logos)

D) Website usability dichotomous and scale additive index components (UI)

	Raw Score Subtotal	Raw Score Total	Weighted
Online Services			
Basic information	1		
Interactive forms	1		
Interactive databases	1		
Multimedia applicat.	1		
Chat areas/mess, bds.	1		
E-mail updates/listserv	1		
Comm. with officials	4		
Documents/public.	4		
Downloadable forms	4		
E-commerce applicat.	4		
Employment inform.	4		
		26	16.67
User-help			
About the site	1		
E-mail us	1		
Personal dig. asst.	1		
Index	1		
Feedback	4		
Foreign language	4		
Search	4		
		16	16.67
Navigation			
E-government services	1		
Link to contact info.	1		
Chat areas/mess, bds.	1		
Link to other agencies	1		
Volume of aids	4		
		11	16.67
Legitimacy			
Contact information	1		
Disclaimer statements	1		
Security policy	1		
Authentication	1		
Privacy policy	4		
Webmaster contact	4		
		12	16.67
Info. Architecture			
Agencies/depts.	1		
Services	1		
Branch of govt.	1		
Brand./struct./metaphor	1		
Audience/market	4		
Personalized/cust.	4		
		12	16.66
Access. Accommodation			
Text telephone	1		
Bobby compliance	4		
		5	16.66
	Totals	**82**	**100 (UI)**

Appendix 6

Website Usability Results in Details

A) Government ministries website usability results

Government Ministries	OS Mean 16.7%	UH Mean 16.7%	N Mean 16.7%	IA Mean 16.7%	L Mean 16.7%	AA Mean 16.7%	Score
Prime Ministry and Ministry of Defence	4.5	7.1	7.6	5.6	2.8	6.7	34
Ministry of Finance.	3.2	6	7.6	5.6	4.2	6.7	33.3
Ministry of Foreign affairs	2.6	6	9.1	4.2	2.8	3.3	28
Ministry of Municipal Affairs	No Website	No Website	No Website	No Website	No Website	No Website	No Website
Minister of Interior	3.2	8.3	9.1	5.6	2.8	3.3	32.3
Ministry of Public Works and Housing	3.2	8.3	9.1	2.8	2.8	0	26.2
Ministry of Education and Higher Education	2.6 3.8	3.6 3.6	3 9.1	5.6 6.9	2.8 1.4	3.3 3.3	20.9 28.1
Ministry of Energy and Mineral Resources	0.6	0	0	0	1.4	3.3	5.3
Ministry of Health	2.6	2.4	4.5	4.2	1.4	3.3	18.4
Ministry of Transport	7.1	9.5	9.1	5.6	4.2	3.3	38.8
Ministry of Industry and Commerce	5.1	10.7	9.1	9.7	1.4	3.3	39.3
Ministry of Planning and International Cooperation	2.6	9.5	9.1	5.6	4.2	3.3	34.3
Ministry of Environment	2.6	8.3	9.1	4.2	1.4	3.3	28.9
Ministry of Labour	5.8	8.3	10.6	9.7	1.4	3.3	39.1
Ministry of Developing Public Sector.	1.9 3.8	2.4 8.3	1.5 9.1	2.8 6.9	1.4 4.2	3.3 3.3	13.3 35.6
Ministry of Awqaf and Islamic Affairs.	2.6	7.1	9.1	5.6	2.8	3.3	30.5
Ministry of Water and Irrigation.	0.6	3.6	0	1.4	0	3.3	8.9
Ministry of Agriculture.	2.6	4.8	10.6	4.2	2.8	3.3	28.3
Ministry of Culture	3.2	3.2	4.5	4.2	2.8	3.3	21.2
Ministry of Political Development	0.6	3.6	4.5	2.8	0	3.3	14.8
Minister of Social Development. Server Down	5.8	7.1	7.6	4.2	0	3.3	28
Ministry of Tourism and Antiquities	1.3	7.1	10.6	4.2	2.8	3.3	29.2
MoICT	5.8	9.5	3	4.2	2.8	3.3	28.6
Ministry of Justice	Disabled website	Disabled website	Disabled website	Disabled website	Disabled website	Disabled website	Disabled website
Average	**3.3**	**6.3**	**6.5**	**5**	**2.4**	**3.6**	**26.8**

OS= Online Service **UH**= User Help **N**= Navigation **L**= Legitimacy **IA**= Information Architecture **AA**= Accessibility Accommodations

B) Government Agencies website usability results

OS= Online Service **UH**= User Help **N**= Navigation **L**= Legitimacy **IA**= Information Architecture **AA**= Accessibility Accommodations

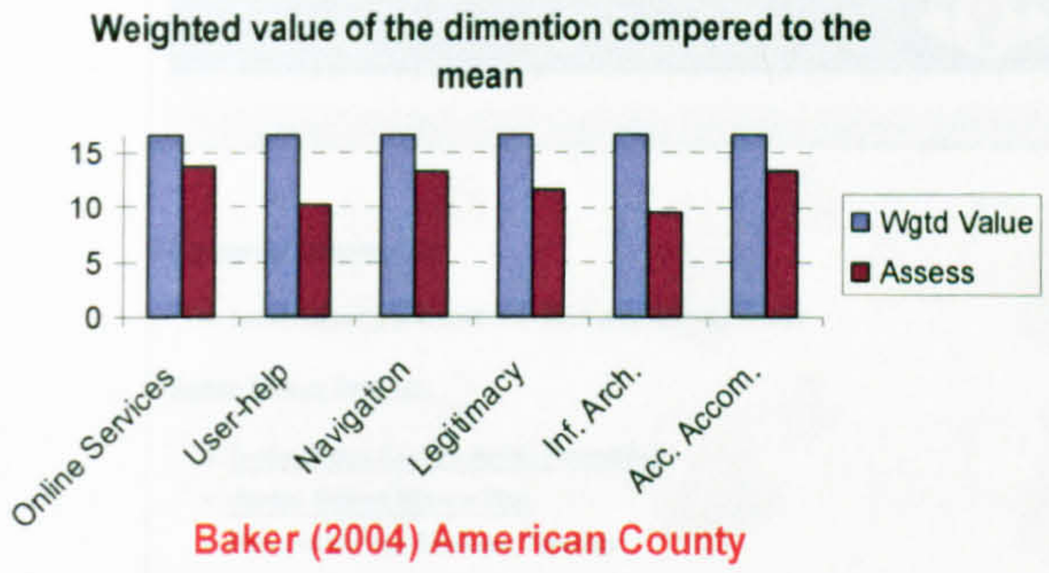
Government Agencies	**OS Mean 16.7%**	**UH Mean 16.7%**	**N Mean 16.7%**	**IA Mean 16.7%**	**L Mean 16.7%**	**AA Mean 16.7%**	**Score**
Income and Sales Tax	5.8	4.8	4.5	5.6	4.2	3.3	28.2
Department of Land's and Survey	7.1	7.1	7.6	12.5	4.2	3.3	41.9
Average	**6.45**	**6**	**6.1**	**9.1**	**4.2**	**3.3**	**35.1**

C) Jordanian Municipalities website usability results

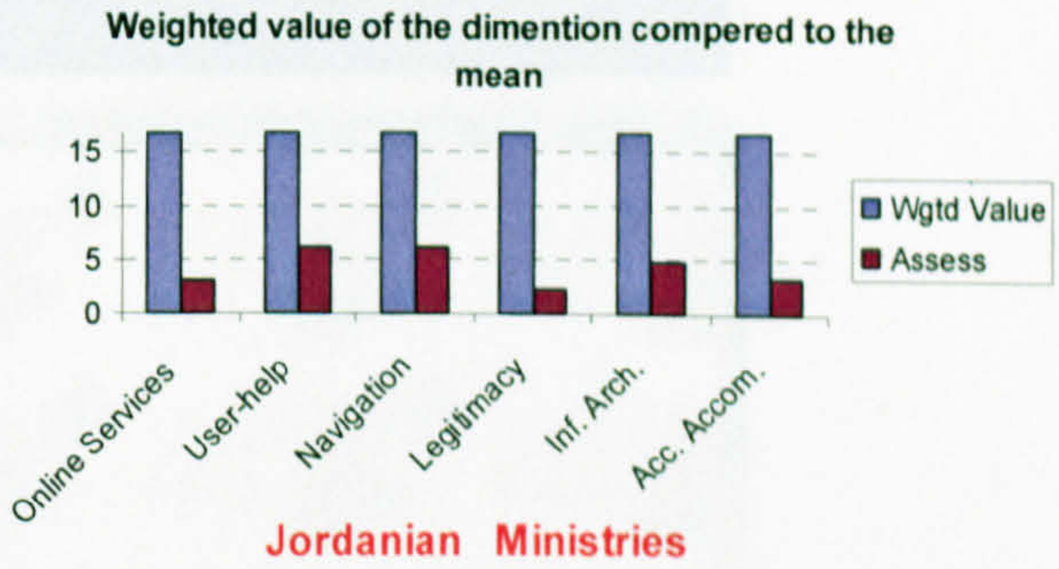
Government Agencies	**OS Mean 16.7%**	**UH Mean 16.7%**	**N Mean 16.7%**	**IA Mean 16.7%**	**L Mean 16.7%**	**AA Mean 16.7%**	**Score**
Amman	7.1	8.3	12.1	6.9	4.2	3.3	41.9
Slat	1.9	3.6	1.5	2.8	1.4	3.3	14.8
Irbid	2.6	4.8	3	4.2	0	3.3	17.9
Zarqa	3.2	3.6	10.6	4.2	0	3.3	25
Average	**3.7**	**5**	**6.8**	**4.5**	**1.4**	**3.3**	**24.9**

OS= Online Service **UH**= User Help **N**= Navigation **L**= Legitimacy **IA**= Information Architecture **AA**= Accessibility Accommodations

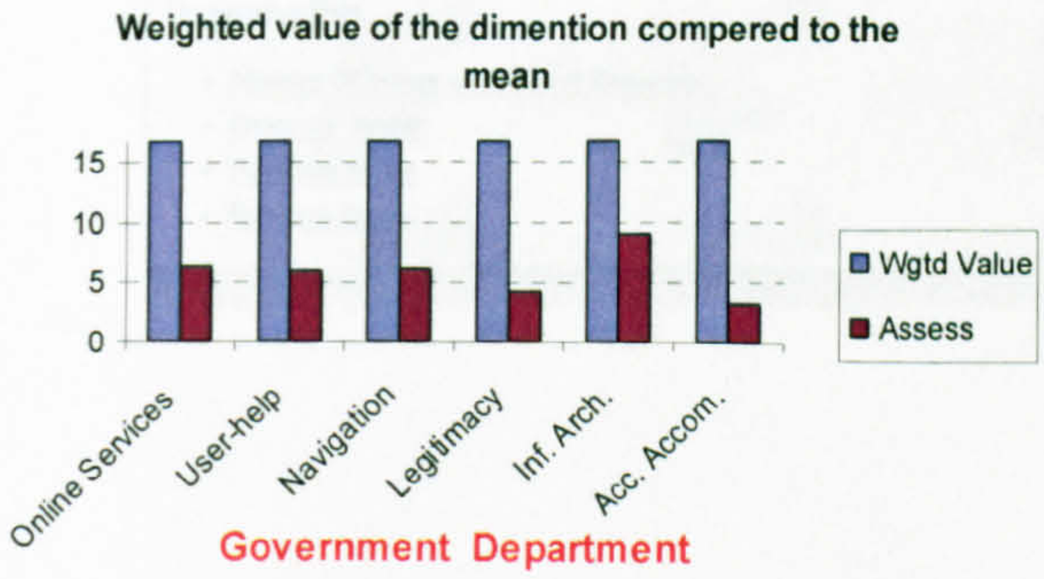
D) Jordanian websites usability results Compared with Barker (2004)



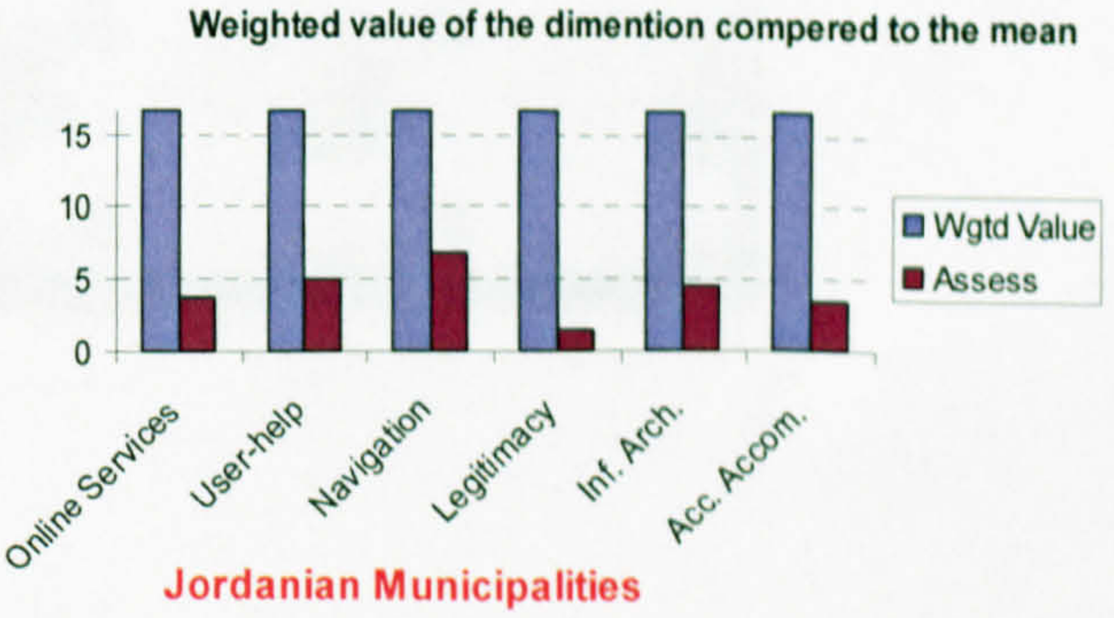
Baker (2004) American County



Jordanian Ministries



Government Department



Jordanian Municipalities

Appendix 7

Screens shot from the Ministry of Truism website

Screens shot from the Ministry of Energy and Natural Recourses

Screens shot from the Ministry of Culture

Appendix 8

Review on the Jordanian e-Government using the generic e-Government implementation model

A) Central Government requirements:

e-Government strategy: Jordanian Government had a vision a mission but did not have solid transformation plans how to achieve the vision and mission, this might be because Jordan is adopting strategies that do no fit their needs and abilities.

Leadership and commitment: Jordan is performing well in obtaining the required leadership, thanks to King Abdullah the Second support and motivation for the deployment of e-Initiatives in Jordan. Inspired by him managerial leadership and commitment in all levels of Public sector bodies might be needed.

Management style: Analysis outputs reviled that e-Government implementation lacks and adequate implementation management style with extreme decentralization being the most evident approach across government agencies combined with top-down e-Government imposed on people and government departments.

Fund: Jordan has a huge problem regarding the funding of e-Government. International donations from wealthy countries, NGO's and leading ICT organizations have a significant role in supporting e-Government projects.

B) Central Government Duties:

Building infrastructure: More than 80% of people are not connected to the Internet and fast connections (ADSL, ISDN, and CABLE ...EST.) only limited to the capital Amman and some areas in the big cities of Jordan.

Telecommunication reform: Jordan has done well in liberalizing the telecom market; still Jordan did not attract required investment because only one company Jordan Telecom is the main provider of landlines.

Building e-Awareness and e-Education: Unnecessary e-Education programs for segments of people. It might be better to concentrate on existing small e-Society and big Businesses as well as industries for the current stage.

Legislating e-Government: There is a need for plenty of laws to effectively regulate the online activities.

Coordination and collaboration between government agencies: There is a need for more coordination and collaboration between different government agencies. At the current stage each government agency website has its unique theme interface, which might reflect even deeper problems in the lack of effective coordination and collaboration required for knowledge management and system integration.

Monitoring measuring and evaluating e-Government projects: Unreliable government online websites, complicated interface along with functional problems within government websites show that there is a shortage in monitoring government websites.

Motivation and support: Not giving successful examples of functional and profitable e-Government projects, also with no reward schemes for the best online ministry.

C) e-Transformation Block:

Agency e-Strategy: Most agencies do not have their own vision and mission to implement e-Government even if any kind of strategy existed it would be within the ICT department without any sort of alignment between it and agencies strategy.

Agency leadership: Indicators show that there is a need for leadership and commitment between agencies.

Stage of agency transformation: Looking through the transformation process within agencies findings show that although agencies having online presence and some amount of interaction they failed to transact and integrate with people.

Technical requirements: The current technology needed for the information stage and interaction is no more than website related issues which e-Government is struggling to manage adequately. However, if e-Government is to achieve integration stage it has to manage three different lyres of technology which will be the front (website) the middle (process redesign) and the back (hardware systems; data bases, servers).

Organisational requirements and effects: Agencies offered employs ICT training, however further actions are required to achieve advanced levels of e-Government, starting from introducing new working methods which will be the start of linking ICT with organisation process, such as enforcing e-Mail usage and the introduction of the Paper Elimination Act, empowering coordination and collaboration within agency departments.

Social implications: The current situation of inadequate online delivery might effect governments image, however if government agencies are to develop to more advanced stages they will require peoples trust, acceptance and resolve digital divide problems

D) Barriers Block:

Fail in duties: Both central government and agency are not adequately executing duties related to the implementation of e-Government.

Cultural issues: Cultural issues within government agencies hold back any development integration and promotion for e-Government initiatives.

Time factor: With no set up reasonable achievable targets, no sufficient e-Government output for more than 6 years since its deployment. This will effect its fund allocation and the commitment of enthusiast people involved in it.

Digital divide: Digital divide is evident in Jordan in different factors influence it gender (94% of internet users are males), age, education, income. Digital divide is not a concern at the moment because e-Government has nothing to offer however the issue will be a concern when the government starts to effectively deliver online.

E) Output block:

E-services: No real services were delivered online; most services are informative and were inadequate.

E-economy: No savings were developed by e-Government projects in addition to e-business and electronic commerce atmosphere is not developed

E-society: People using the internet are very few less than 20 % of the population few of them owned a PC.

These harsh realities of despotising outputs of the Jordanian e-Government project after 6 years of e-Government Implementation indicates that Jordan has a long way to go and much more effort to put before any outputs could be recognised.