E-Government Services an Exploration of the Main Factors that Contribute to Successful Implementation in Libya

By
NASSRADDEEN AMER ALI. O. SWEISI
(Libya)

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School of Computing, University of Portsmouth,
Buckingham Building,
Lion Terrace,
Portsmouth,
PO1 3HE
The United Kingdom
, September, 2010

To my Family for their Love and Support

DECLARATION

I, Nassraddeen Amer Sweisi, declare that the PhD thesis entitled E-Government Services an Exploration of the Main Factors that Contribute to Successful Implementation in Libya. The results and conclusion embodied in this thesis is my own work.

Signature: _____ Date: _____

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Portsmouth, UK

ABSTRACT

This study focuses on the rise of e-Government services around the world, and specifically considers Libya as an example on its efforts and challenges with respect to implementing an e-Government services initiative. E-Government services represent a fundamental shift in the design and methods of government efficiency, accountability and commitment. However, Libya in particular seems to face steep and unique challenges when it comes to the implementation of e-Government services. The country often seems to lack sufficient resources, infrastructure, and know-how to implement a large-scale e-Government services project. Furthermore, a large number of the Libyan population often have little contact with computers and the Internet, and may be distrustful of technology and their government. Primarily, this study aims to articulate the challenges and suggest strategies to overcome them.

First, the study provides a literature review, from which a model for the adoption of e-Government services in Libya based on the principles of business management is derived. It details the phases of transforming to e-Government services, including (a) establishing a vision; (b) developing goals, objectives, a work plan and actions; (c) assessing Libyan people's awareness of e-Government services; (d) setting performance benchmarks; and (e) measuring success. Then, the study employs field studies designed to find out the opinions, attitudes and perspectives of the stakeholders in Libya's fledgling e-Government services initiative.

The results from the data collection confirmed that there are numerous factors that may have to be overcome. A particular instance is that Libya must reach out to its citizens about internet technology, improve its national technological infrastructure, and include the input of all stakeholders in the design and implementation of e-Government services. Following from the surveys, the study also considers a number of specific case studies on Libya that emphasise in compelling terms the challenges, successes, and struggles of Libya's e-Government services initiative so far. The study makes recommendations and suggests strategies to deal with the identified challenges and finally provides a roadmap to policymakers and the key stakeholders in Libya that may assist in the successful implementation of e-Government services programmes.

PUBLICATIONS ARISING FROM THE RESEARCH

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ABBREVIATIONS

WWW	World Wide Web
ICTs	Information and Communication Technology
G to G	Government to Government
G to B	Government to Businesses
G to P	Government to Public
C to C	Customer to Customer or Citizen-To-Citizen
OMB	Office of Management and Budget
ROI	Return on Investment
TM	Theoretical Model
SNT	Social Network Theory
NCFCTD	National Centre of Fighting Contagious and Threatened Disease
LMH	Libyan Ministry of Healthcare
NE	North East
BBDA	Benghazi Blind and Disable Association
LD	Libyan Dinar
SPSS	The Statistical Package for Social Sciences
IDTV	Interactive Digital Television
DD	Digital Divide
CPD	Continuous Professional Development
ADSL	Asymmetric Digital Subscriber Line

CHAPTER 1
INTRODUCTION

1.1 Background of E-Government Services

Why go online? Why change the way government works? Today, in every region of the globe from developing to developed countries, businesses and governments are putting critical information online, automating processes and interacting electronically with their customers and citizens Bhatnagar, (2004). The private sector seems to have taken the lead and have made the transition online to fulfil the changing needs of its customers. Governments and public sector organisations are now under the pressing needs of their citizens and businesses to make the transition. In today's economy, both businesses and governments are gradually shifting from tangible to intangible assets Banayo, (2002). People, skills, knowledge, innovation, leadership, technology and others are an integral part of successful business and government institutions**.**

The technological advances of the last decade have changed the way we live and work. The World Wide Web, (WWW) powered by the revolution in information and communication technologies managed by human capital, is offering people, governments, and businesses a whole new way to interact and communicate Jaeger and Thompson, (2003). For instance private sector companies are selling their products and services online. Universities are offering distance learning and certificates over the Internet. Financial institutions are banking online Chaffey, (2002). For each one of services delivered online there is a customer at the end. People are shopping, learning, and banking with new experience and convenience.

Governments have realised that Information and Communication Technologies (ICTs) can help them to interact and communicate with the public, businesses and others Wimmer and Traunmuller, (2004). The availability of the Internet 24 hours a day, seven days a week and the character of the WWW – "anytime, anywhere" – allowed government information and services to be more available to more people at greater convenience and with increased satisfaction Schiavetta, (2005).

Adopting electronic government is no longer an option for governments, but rather a necessity due to the needs of people, global competition and new demands of the information age, particularly in developing countries such as Libya.

1.2 Background of Libya

In Libya, the transition to e-Government services helps to rethink the role of government which is significant for its survival and growth in the global competition. The government seems to control a large portion of economic activity. Therefore, it is important that the government harness modern technology in order to improve the quality and quantity of services it render to its people.

The transformation from traditional government to e-Government services is complex, touching the political, cultural, organisational, and technical aspects of everything that the government and other public service providers do. In dealing with this challenge, governments need to integrate work systems, processes, development, and welfare into a very strong performance management system that its employees can use effectively.

Libya is a developing Arab country located in the north-central part of Africa. Official name of Libya is The Great Socialist People's Libyan Arab Jamahiriya (GSPLAJ). Islam is the state religion and about 97% of Libyans are Sunni Muslims. The GSPLAJ was established in 1977 according to the 'Third Universal Theory' of the green book by colonel Muammar Al Qathafi Al-Mabrouk and Soar, (2009).

Official language of Libya is Arabic, while English and Italian are also being used in business and trade. It is the fourth largest country by area in Africa and seventeenth in the world. The country occupies an area of almost 1.8 million square kilometres (KM) with a population of 5.3 million. Due to vast area and small population major cities have big distances among them as illustrated in Figure 1. The vastness of the area could be illustrated by the fact that it shares 459 Km long border with Tunisia (West-North), 982 Km Algeria (West), 354 Km Niger (North-West), 1055 Km Chad (South), 383 Km Sudan (South-East), 1150 Km Egypt (East) and have long coastline of 1950 Km on the Northern side of Libya overlooking on the Mediterranean Sea Al-Mabrouk and Soar, (2009).

The three major cities of Libya are Tripoli, Benghazi and Sabah. The capital of Libya is Tripoli which is home to approximately 20% of Libya's 5.3 million populations. Libya has the fifth highest the gross domestic product (GDP) per capita of Africa as it has large petroleum reserves, which is 2% of world oil produced (http://tinyurl.com/p4aqw7).

1.2.1 Political Context of Libya

In 1969 monarchy was overthrown by Al-Fatah Revolution headed by Colonel Qathafi and since then he is the supreme commander of Libya. The revolutionary leadership is not elected by the people and cannot be voted out of office. Because, they believe they are in power by virtue of their involvement in the revolution. In the spring of 1972, a new political, administrative and legislative system was introduced as part of the Al-Fatah revolution, which established a socialist state, to be governed only by the people. In 1980s the leader created the public conferences (local assembly) in every single part of each city to practice the new form of democracy leading to the introduction of the green book Agnaia and Gherian, (1997). Private sector was banned and wide range of public-owned enterprises was formed, therefore, foreign companies moved out from the country Sturman, (2003). Since that time Libya is a one-party state with no formal constitution.

The Libyan social environment is characterised by the extended family, clan, tribe, village and Islamic religion. This plays a major role in the community's life and people's relationships Agnaia and Gherian, (1997). Stakeholders and interest groups traditionally exist such as heads of tribes, public conferences, government staff and Business men which have influences on the legislations and polices of the country.

The government institutions are plagued by corruption and nepotism. Personal relationships matters more than established institutions, for example government favours their friends and relatives when it comes to recruitment for jobs and other services. Government information seems to be secret and does not reveal any information to people. For the last four years there has been some changes as government have started to release some information and a bit more transparent about their activities to the public.

The government controls both state-run and semi-autonomous media by some laws including terrorism law to censor all programmes related to political and religion. In some

cases the private press, has been censored although articles of policies have been requested and intentionally published by the revolutionary leadership itself as a means of initiating reform Agnaia and Gherian, (1997). Civic association were allowed in 2004 whereas independent political parties are illegal. However, independent traditional trade unions and professional association do exist. Political trials are held in public conferences (local assembly) in every part of each city "they called it Comona", which runs by a team chosen by the local people. Parliament in Libya is known as 'General Public Conference' which is elected by local assemblies (public conference branch). Education and healthcare are provided freely.

In 2007 Libyan government changed its policies and invited U.S. and international companies for partnership in construction sector to renew and develop the basic infrastructure of the country. Moreover, Libyan government has set up a budget of US50 Billion for the housing, tourism infrastructure which includes telecommunication services, rails, roads, and airports projects. In addition, Libyan government has set up a significant budget of US14 Billion for the communication and electricity for 2009 only with the aim of bringing e-Government services into all sectors of the country (http://crgp.stanford.edu/news/global_projects).

1.2.2 The Impact of Destinations Between Cities And The Capital in Libya

Most of the cities are away from the hub of the country which is Tripoli. For example, Surt is 500 Km away from Tripoli, Al-Jawf, Ghat and Tubrak are approximately 1700 Km away in different directions from the capital.

Figure 1 below illustrated the vastness of country in terms of area, whichs is 1.8 million Square Kilometers.

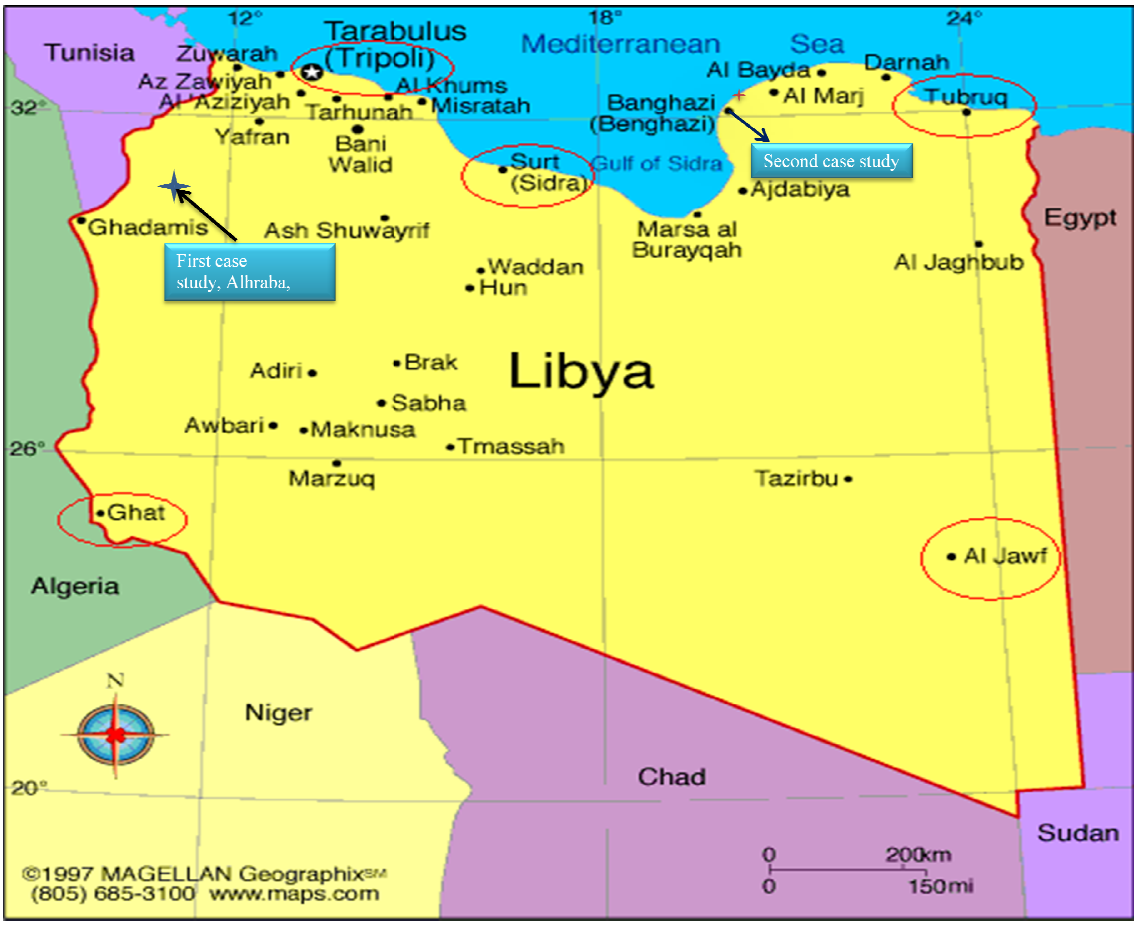

Figure 1: Libyan Map Showing the Major Cities in Libya and the Distance from the Capital "Tripoli". The Blue Triangles Show Where the 1st and 3rd Case Studies Took Place.

Due to lack of telecommunications, transport, and access to internet it becomes difficult for people to get to the capital to transact business. For instance there is no state-run postal services in Libya as it is in the UK (Royal Mail). Consequently the people find it extremely difficult to have work done from remote. Whereas, Libyan people need to travel to the capital to get things done. For example, if someone is living in Al-Jawf (see map above) and want to incorporate a new company or renew a passport then he/she needs to travel to Tripoli to finish his/her business. In additon, most of the cities doesnt have airports. Therefore, they need to travel either by car or public transport, which takes two to three days in some cases. To make it worse roads are also not good in many parts of the country. Bribery and corruption in departments seems to be an accepted practice. Needless to say this takes a toll on peoples' health and resources.

1.2.3 Unique Factors in Libya and Where E-Government Services Can Be Developed

The situation in Libya is unique in many aspects, accompanied by some characteristics that led to the technologies equipment embargo from the Western Countries in 1982. Libya has some natural resources and produces 2% of the world's total oil output. Despite all these infrastructural outlay is in very poor state. Reasons could be from technological and economic embargo from the western countries on Libya for more than 23 years since 1982 until 2004. In addition, the United Nations imposed "Air embargo" in 1990 until 1999 Mark, (2005) which means that there was no flight connection between Libya and the rest of the world. Consequently, it increased the problems, challenges, and barriers for instance to create or/and improving education and other industries and services Simons, (1993).

The unique factors of Libya have also led to lack of technological transfer, for example there are no postal services in the country as UK used to have the Royal Mails. More than 50% of the population are studying probably because of the fact that education is free and around 9% of the population have retired. Thus, less than 40% of the total population constitute the workforce of the country. At the same time to teach such a big population, institutions need huge teaching forces. However, this population going to turn into working population and will bring new skills and knowledge about advanced technologies. There is high rate of road accidents claiming among 30-55 lives weekly Almizan, (2009) http://tinyurl.com/l65eok. So, it would be important if government could bring e-Government services to all sectors of the economy particularly in the educational sector to narrow the distance gap between and among the cities to minimise unnecessary travelling. This could also lead to transparency, accountability as well as filling the skill shortage gap.

These complexities, particularly in Libya create the need to develop and propose a careful and suitable plan to simplify the transformation process to e-Government services so that key elements of e-Government services can be grasped and identified. Moreover, this study is geared to help Libyan government to transfer government services from traditional ways to e-Government services and to better understand this new method of governance at the local and country level. Using advanced technologies such as e-Government services which seems to be prevalent everywhere in Western World will be worthwhile for the people of Libya. All this problems make it imperative to bring e-Government services to serve the

community better, which will not only reduce the bureaucray but also the time, money and efforts of Libyan people. Areas where e-Government can play a vital role may include: Education, health care delivery, civil and public services as well as in the private sectors.

1.3 Difficulties and Challenges in Libya

Libya is an interesting case study since it is a large country in area but has a relatively small population at approximately 5.3 million people the Libyan general organization, (2006) as mentioned earlier. In addition the population demographics are weighted towards the younger age groups, for instance approximately 2.2 million people are in the educational institutions. Accordingly there may be the capability to inform and practice e-Government services actively with a significant proportion of the population, by providing ICTs courses at schools and Universities. Importantly, people in active education are the future stockholders. Furthermore, educational staff in particular Universities lectures provide expertise and communication channel to disseminate information about e-Government services.

Libya like many other technologically developing nations, resources such as skills, manpower, finances, infrastructure, are not infinite. There is a need to identify and prioritise which e-Government services should be developed first and also which are the most important factors in getting adoption of the technology. Just giving people computers will not make people computer literate: people need training and understanding about the technologies and why it is important to them. Stakeholders' theory is also suggested as a tool to investigate e-Government services transformation in Libya.

While the primary delivery method for e-Government services is the Internet, governments have been researching, designing, and implementing a number of other mechanisms, known as "e-channels". For example, landlines, mobile phones, and interactive digital television (iDTV) are all being promoted by some governments as technologies that offer the opportunity to provide e-Government services to a wider swathe of the populace. The idea that some e-Government services can be provided and accessed through the television or/and mobile phones rather than a computer is compelling; using television as an e-channel is especially attractive for countries where there are few homes with personal computers and with people (practically elder or/and illiterate people) who are not familiar with computer usage. For instance, in Libya, few individuals own computers, but television

and Mobile phones are a common and well-understood technology. However, it is still not enough to deliver e-Government, services only using these channels. Government can exploit this feature to provide some services and to enhance efficiency and effectiveness of government.

The benefits of e-Government services are obvious in a country like Libya, which is very large and has long distances between cities (Figure 1). People who need to conduct many government transactions and activities must travel to “local” cities or even to the capital which often required making a journey of hundreds or thousands of kilometres which takes considerable time and money. However, e-Government services provide the promise of removing the need to travel long distances. Basic needs for government information can be provided on the web. The ultimate goal of government might be to provide critical services in the most efficient way possible.

Lack of new technologies awareness is often the first challenge in the implementation of e-Government services Abdulrazzaq et al., (2003). Libyan government launched its website in June 2005, initially targeting a few key services such as providing information about legislative, law, and Prime Minister Activities. The director of the Libyan e-Government services set a questionnaire on their website asking people about how they value the e-Government services website. The results of this inquiry revealed that majority of people in Libya do not know what e-commerce, e-business, e-Government services, and ICTs are. Furthermore, the Libyan government still has not formulated e-Government services and e-business laws such as incorporating digital signatures. Moreover, government officials are not always impartial in sharing information with each other and the majority of their customers The Libyan Prime Ministry homepage, (2006).

Cultural challenges emerge with ICTs use. Officials and corporation managers believe that asking for help is an indication of lack of ability; others may be unaware of the training and support they need. Meeting this challenge means building the capabilities for finding the right help and for mentoring each other to develop successful innovations.

Change of culture towards e-Government services is not just simply the process of moving existing government functions to an electronic way. It is to help people to rethinking

about government functions; whereby users, government and businesses engage in dialogue mediated by ICTs. People and officials have to get into the habit of allowing sharing of information getting on the net and doing their daily transaction online. Changing culture is a tough challenge. For instance, fear and anxiety of governance, “not give up the power”, cooperation and coordination among public organisation including government officials and citizens has been very difficult. In addition, there is low familiarity with technologies. Lack of computer skills and management as well as the difficulty in changing old habit on the side of public servants is among the challenge. It is very hard to wean people off traditional methods, which they have used for years.

Libyan government officials at the moment have to use computer keyboard rather than paper and pen. They had to learn to do their jobs more quickly and efficiently. A key step is to educate public servants and government leaders to persuade them to introduce ICTs in the Libyan educational system. This could be achieved by explaining to them what e-Government services is and what its benefits are. The next challenge concerns how to develop continuous professional development on ICT for government staff and the general public who will use the e-Government services system.

There are telecommunication infrastructure and access challenges. There are problems of resistance to usage of the Internet due to limited bandwidth and high cost of using new technologies. In Libya, compared with other countries, access costs are high, except for those who have Internet access at work or some other organisations. This makes it too expensive for the Internet service providers to buy large amount of bandwidth, which leads to a big lag time. This generally, has a negative effect on the efficient usability of the network within Libya. There are further challenges with landlines availability in Libya. Currently (2005) there are ten landlines to every 100 people in Libya (Woodward, 2005). This lack in the number of telephone lines acts as one of the main barriers to Internet use. It is difficult to compete in the information age without reliable telecommunication tools. The digital divide (DD) operates at an international level.

The full benefits of e-Government services may only be obtained when the majority of people get access to internet and electronic services channels and fully integrated participation of people; government has to address this issue Hossan et al., (2005). However,

government can use the available channels to provide services until they are able to overcome the potential challenges, barriers and introduce full e-channels and technologies infrastructures with respect to e-Government services.

The researcher emphasise that the educational system seems to be the best avenue for initial adoption of e-Government services in Libya.

1.4 Research Aim

The aim of the research is to determine factors and challenges that could lead to the failure or success of e-Government services implementation in Libya and propose guidelines for its successful implementation. Libya is making initial strides in providing e-Government websites. Below is the list:

1. The General People's Committee (Supreme Council of Ministers) (http://gpco.gov.ly/home.php)
2. The People's Committee for Economy and Trade (http://www.ect.gov.ly/real/)
3. The People's Committee for Foreign Affairs (http://foreign.gov.ly/online/)
4. Ministry of Finance (http://www.mof.gov.ly/site_mof/main.php)
5. Ministry of Justice (http://www.aladel.gov.ly/main/)
6. Ministry of Higher Education (http://www.higheredu.gov.ly/)
7. Ministry of Labour (http://www.smpt.gov.ly/)
8. Ministry of Industry (http://www.industry.gov.ly/)
9. Ministry of People's Security (http://www.almiezan.net/index.php)
10. National Oil Corporation (representing Oil Ministry) (http://www.noclibya.com.ly/).

However, these efforts seems to be limited, haphazard, and inefficient and do not represent a comprehensive e-Government services programme on behalf of the Libyan government. As part of the aims to determine a unique model based on the principles of business administration that the Libyan government can adopt in its e-Government services implementation efforts. Ultimately, the research aims to improve the general awareness of e-Government services by providing a set of guidelines that would help the Libyan' government' transition to an e-Government services environment by overcoming common challenges and problems. Further, this study aims to articulate a suitable theory of e-Government services and provide a best fit theoretical model.

Research has demonstrated that e-Government services needs to be implemented in a cautious and well-thought-out manner. Layne and Lee, (2001) argued that in a poorly-designed e-Government services model, "literature reports the experiences with e-Government services initiatives as chaotic and unmanageable, despite recent numerous initiatives at different levels of government and academic and practitioners' conferences on e-Government services" (p. 122). The primary problem that governments in developing countries such as Libya are currently facing lack of efficient Heeks, (2002b), clear model that outlines the steps of e-Government services implementation. Such a model could be adopted to meet the specific circumstances of Libya, and are the joint goals of this research study.

In every region of the globe, new business and government models are constantly emerging. In these models, the prevalence of intangible assets has changed the way businesses and governments work and interact with customers and citizens Chadwick and May, (2003). Governments are challenged with deciding where to start, and which e-Government services model to use.

This study is motivated by a desire to leverage e-Government services lessons already learned in other countries to maximize the chances of success for implementing an e-Government services project in developing countries. It will reflect the collective experiences gained from this study and research, and the knowledge acquired during the Ph.D. programme.

This study will also help government officials in Libya planning to pursue an e-Government services project to develop a sound and reliable e-Government services transformation. It will touch on the phases of transforming to e-Government services, including (a) establishing a vision; (b) developing goals, objectives, a work plan and actions; (c) assessing readiness; (d) setting performance benchmarks; and (e) measuring success. It will offer advice on how to understand an unwilling bureaucracy and overcome resistance to change.

1.5 Purpose of the Study

The successful implementation of e-Government services appears to be the ultimate goal of citizens, businesses, and government in Libya. It is essential to adopt these new technologies and improve the knowledge and skills of those who intend to use these technologies. The rapid advancement of new technologies has created a widening gap within and among countries, between those who can harness this technology and those who cannot. Companies must invest in new technologies in order to remain competitive and seek out new markets and channels for their products. Governments, in a similar fashion, should invest in new technologies in order to improve their service efficiency and accountability. It has been demonstrated that e-Government services contributes to delivering quality services to a country's people. This study aims to provide a data-based plan for Libya to adopt an e-Government services programme and overcome the abiding challenges it faces. It is becoming increasingly evident that an increasing number of governments around the world are moving toward e-Government services. Ultimately, the purpose of this study is to identify the factors that may support or impede the implementation of e-Government services in Libya, and to provide a plan to respond to these challenges and opportunities.

1.5.1. Research Question

This study aims to determine an answer to the following generalised research question that guides the entire study: ***What are the main factors that may contribute to successful implementation of e-Government services in Libya?***

1.5.2. Objectives

In order to answer these research questions, five key objectives have been identified.

1. To identify the main challenges faced by governments in developing nations with respect to adopting e-Government services.
2. To focus on the awareness of e-Government services in Libya in order to better understand how a successful e-Government services program would be designed, developed, and implemented.
3. To develop suitable theoretical models to investigate and describe e-Government services adoption and awareness in Libya.
4. Design a step-by-step plan for the transformation of the traditional system of governance to an e-Government services system of governance.

1.6 Hypotheses

Based on previous research on theories of technology adoption as well as theories covering organisational change and change management, it is clear that the implementation of new technologies is usually delayed due to external and internal factors. In order to promote the successful implementation of organisational change, leaders must involve pertinent interest groups in the vision for change since these interest groups can either support or block any proposed institutional changes Freeman, (1999).

In the case of Libya, obstacles may include the general resistance to change, especially when new technology accompanies that change as the general population of Libya seems to have very little knowledge about ICTs. Their influence will not be enough to help implement an e-Government services project Sweisi and Adams, (2008). Further, stakeholders may oppose new changes to the government infrastructure. For instance, some government officials might fear that they will lose their jobs due to an e-Government services initiative Heeks, (2002b). Information ownership may be seen as a barrier, in Libya everything related to government document or/and information seems to be treated as secret. Distribution of government information may be another component that could lead to some officials opposing a new information-sharing model.

Against this background the researcher drafted the following major hypothesis:

H_1: The e-Government services in Libya may have a good potential for success due to the need for global competition, transparency, and efficient government services. The acceptance of e-Government services model will be determined by various positive or negative factors.

The research is also guided by some minor hypotheses, which include:

1. In general, businesses, government officials, and citizens may perceive e-Government services positively; however there could be less support from government officials.
2. The critical success or failure factors that could affect the implementation of e-Government services in Libya may include: the general public's knowledge and skills, peoples' awareness, cultural and technical challenges, trust and participation.

3. The successful implementation of e-Government services in Libya may rely greatly upon the extent to which government officials and other stakeholders will be able to cope with the inevitable change with respect to e-Government services.

1.7 Research Methodology

The research methodology will be covered in detail in (Chapter Four). However research methodology will be addressed within the context of research design, research questions and hypotheses, research design, pilot of study. This thesis will have two research streams. The first part will use three different methods which are:

1. An online questionnaire will be hosted on the web site of the Libyan Prime Ministry to invite respondents to answer the questions.
2. Paper-based survey will be provided to three different groups in total (hundred fifty respondents) of Libyan citizens which are Students (as high level of usage and awareness of technology), Engineers (as medium level of users of technologies), and Farmers (as low level users of technology) from ten different cities covering various Libyan regions.
3. In addition to the survey methodology, in-depth interviews will be conducted on six different key stakeholders.

The second stream will focus on case studies for deeper understanding, of the research topic.

When conducting survey-based research it is important to use different groups and large sample size to balance the opinions, attitudes, and beliefs fairly quickly at a relatively low cost to answer the abstract question about the topic – in this case, the effective implementation of e-Government services in Libya Rogers, (2002).

The independent variables under consideration in this study include the factors that could positively or negatively affect the rate of adoption and implementation of e-government. The dependant variable, in this case, will be the rate of adoption of innovations. A complete list of both dependant and independent variables will be provided in the appendix C. A questionnaire will be developed to measure those different variables.

1.8 Rationale and Significance of the Study

The main challenge for developing countries like Libya to implement a successful e-Government services programme may be lack of resources, including: lack of human capital, infrastructure, and financial resources Heeks, (2002) and Basu, (2004). Most of the research on e-Government services initiatives focus on developed countries. In most developed countries, Internet access is taken for granted; in contrast, Libya seems to have minimal internet access and accessibility is only available in big cities. In general, Internet use and computer awareness might be extremely low or non-existent among the general population of developing countries such as Libya Byrne et al., (2005). Due to this challenge, e-Government services initiatives in Libya may have to focus on cost-effectiveness and reaching out to a population with little technological awareness. .

Indeed, most research on e-Government services focuses on topics that do not directly respond to the immediate needs of Libyan people. For example, many studies consider the issues of privacy and security with respect to e-Government services. Privacy and security are major concerns for e-Government services implementation in Western countries Accenture, (2003) and Glassey and Chappelet, (2003). Admittedly, privacy and security are issues that are intended to be considered with respect to e-Government services implementation in Libya. However, the issues of privacy and security are only of tangential value to Libya, where there is very little or no understanding of the basics of the e-Government services concept itself. For example concentrating on security, privacy and online signatures will be like ‘buying paint before building the house’. The lack of technological literacy in general seems to be the major challenge for Libya. Privacy and security concerns may be only secondary in Libya, where computer literacy is very low and Internet coverage is minimal Sweisi et al., (2007).

The primary concern in Libya would be improving the awareness of the general public with respect to an e-Government services initiative. Studies that investigate the factors that may contribute to the successful or failure implementation of e-Government services would be primary interest to Libya. In addition, it is unclear whether privacy and security issues would be viewed the same in Libya as it is in Western countries. Therefore, this research largely ignores ancillary issues and concentrates mainly on the important factors, by attempting to explain how to successfully implement e-Government services in Libya. This is

an area that has not been covered thoroughly by earlier researchers. This study intends to fill this knowledge gap by providing guidelines to Libyan government.

1.9 Organisation of the study

This study consists of nine chapters, including the introduction chapter. Chapter four will describe the methodology and philosophical approach, research design, data description, research process, and a summary. In Chapter two the study will review the available literature about e-Government services, understanding of the benefits, advantages, and limitations. Chapter three will be a continuation of the literature review chapter and the focus will be identifying challenges that might face Libya with respect to e-Government services. Chapter five will provide results, findings and analysis of the primary data (online-based, paper based surveys, and interviews). In chapter six, the study will provide case studies, Alhraba case, vaccination programme case and Benghazi Blind Association (BBA) case. Chapter seven, the study will conclude the proposed approach of the TM. The Chapter eight is the discussion chapter. In chapter nine the study will provide a conclusion, contribution of the research findings, limitation of the study and articulating general recommendations.

CHAPTER 2
LITERATURE REVIEW

2.1 Introduction

Creating e-Government services is a key to Libyan' future, its social wellbeing, through its focus on better understanding and meeting individual citizen's needs and creating opportunities for greater public participation in government and transparency processes Sweisi and Adams, (2006). The literature review on the research topic is covered in Chapters two and three. This Chapter which is the Chapter two describes several fundamental concepts for this research. It describes the context and concept of government, e-Government services and provides a review of literature that focuses on the successful implementation of e-Government services. The next Chapter deals with the review on existing literature on primary challenges that face e-government services planning and implementation.

2.2 The Role of E-Government Services

Using ICTs is becoming a powerful tool for many governments and members of the private and public sectors. Private companies in particular are increasingly taking advantage of the opportunities that is offered by new technology Sharma, (2007). It is worth noting that globalisation, demographic changes, and the growing influence of technology are reshaping our lives at breathtaking speed. A world economy based on digitally-empowered enterprises and people seems to be giving rise to a new set of critical success factors for survival in the global marketplace. The Internet – the nervous system of this digital network – is growing exponentially and an increasing proportion of the world is becoming interconnected as people begin to understand the potentials of the new technology Chaffey, (2002).

These developments have forced various institutions, businesses, and governments to renew themselves in order to keep serving their customers appropriately and provide them with expected information and services Sweisi and Adams, (2008). Along with the spectacular rise of e-commerce and e-business in private organisations around the world, the world has seen the emergence of a related phenomenon in government organisations, known as "electronic government services," or e-Government services Turban, (2000).

Researchers such as Basu (2004); Jaeger and Thompson (2003) have recognised that around the world, significant resources are being mobilised in tandem with human resources and energies to design, develop, implement, and promote the use of e-Government services. The Libyan government is no exception in this global drive into the virtual world. However, because the resources required for this electronic transformation are very scarce in Libya in the face of socioeconomic development and poverty, it has become prudent for e-Government services intervention programmes in Libya to move at a gradual and selective pace. Heeks, (2003) wrote: taking benefits from developed countries' experience, understanding their success and failures, adapting that knowledge and applying it, as well as taken cognisance of local conditions, will be important for the future of e-Government services implementation. The views of the above researchers seems to add credence to the problem definition in chapter one that Libya as a developing country should also aim at taking advantage of the benefits of e-governments services, especially for the educational institutions, which deals with the largest portion of the country's population as shown in the age profile (Table 5 in the Chapter Five).

Ray and Rao, (2004) indicated that direct effects of e-Government services include increased cost effectiveness in government and public activities, significant savings in the areas of public procurement, tax collection, personal details compilation, and customs operation, and better and more continuous contact with the citizens, especially those living in remote villages and the countryside. The above findings suggests that e-Government services is an effective and innovative way of governance which can help Libya reduce the distance gaps between and among cities and also reach the underserved population at a relatively cheaper cost. This in turn will also reduce road accidents which currently stand at 35-55 deaths weekly as identified in (Chapter One). Jaeger and Thompson, (2003) is of the view that e-Government services apart from its direct benefits has an indirect benefits as well and these may include greater transparency, accountability in the public sector, the strengthening of local institutions, and improved statistical services. Further, e-Government services initiatives can help combat fraud, nepotism and corruption, which seem to be prevalent in Libya.

Boyle and Nicholson, (2003) identified that the process of globalisation may reduce income disparities among countries and increase equity within countries. If this is accurate,

then for many countries, addressing the awareness of the digital divide issue will be as much an external as well as an internal battle. At both levels, e-Government services will be a powerful tool to help all types of economies both developed and developing such as Libya. Externally e-Government services may help Libya to increase its international dealings. For instance previous trade embargo placed on Libya has stifled its economic development and technological infrastructure hence e-Government services seems to be a catalyst for the country to catch up with its neighbours and the rest of the world. In sum introducing e-Government services in Libya has various benefits both externally and internally to hasten the socio-economic development of the country. E-Government services according to the research findings above have the potential to improve the well-being of Libyans. However, the successful implementation of such project needs the commitment and support of the government.

2.3 Introduction to e-Government Services

The little letter 'e' is now driving a fundamental shift in knowledge. It is changing the landscape of nearly every business and government institution in the world. It is changing the way we live and work. It is now standing in front of many words (e-commerce, e-business, e-reengineering, e-technology, e-Government services, etc.). 'e' simply means a new way of shaping and reforming our businesses and organisations by utilising the power of ICTs.

Traditionally, interaction between a citizen or a business and a government agency took place in a government office. With emerging ICTs and the ongoing transformation to a knowledge-based economy, it is possible to bring government services directly to citizens and businesses, fundamentally changing the way governments work.

Some governments and politicians across the world have the perception that using ICTs are necessary to improve the economy. However, the establishment of e-Government services has even further-reaching implications than mere economic growth. E-Government services allow governments to deliver services to all different sectors and share information among Ministry departments government to government (G2G), government to public (G2P), governments to customers (G2C), government to business (G2B) (Becker et al., 2003). As these technologies become increasingly widespread, their adoption becomes increasingly necessary; otherwise, an institution will become isolated, frozen out by the e-Government

services revolution Benton, (2003). Connections between governments, businesses, and citizens are becoming more critical in the age of e-Government services. Further, there is no single organisation or government that can develop all the desired services and have all kinds of expertise needed “in house” Bose, (2004). Therefore, collaboration between the public and private sectors, as well as citizens and governments, is necessary.

Nearly every government on the globe has already set up a web site or is in the process of setting up a web site Darrel, (2006), putting huge amounts of information online. Public and private institutions are undergoing these transitions rapidly, through e-channels such as the Internet, TV, Mobile phones, telephone lines, and other services, investing billions of dollars. Governments have been taking advantage of this global technological transformation in order to improve their services and respond to long-standing criticism of government operation Ebrahim and Irani, (2005). Because a great number of citizens and other sectors currently view their governments as bloated, wasteful, and unresponsive to their needs, governments can’t achieve their goals without adopting some sort of e-Government services initiative Darrel, (2006).

The meaning of e-Government services varies across the globe. In research, the definition of e-Government services depends upon the particular author’s views Sweisi and Adams, (2006). However, numerous definitions have been developed, most of which emphasise two points. First, e-Government services changes the way in which government delivers its services Hafeez and Sher, (2006). Second, e-Government services employs the use of ICTs technologies Halligan and Moore, (2004). In sum, e-Government services simply means a new way of delivering government services to citizens, businesses and other partners Kim, (2004). This new way of delivering services is unique. The implication of government to government (G2G) will be to provide government services anywhere at any time utilising the power of ICTs Turban, (2000). This is an evolution and a continuous process that involves cost, risks, and anticipated benefits. As has already been said in this chapter the implication (G2G) may also enhance Libya political, social and economic relations among countries and its development partners.

Similar to e-business, which brings customers closer to businesses (B2C) and allows businesses to interact with each other more efficiently (B2B), e-Government services aims to

make the interaction between government and citizens (G2C), government and business enterprises (G2B), and inter-agency relationships (G2G) more friendly, convenient, transparent, and inexpensive Fang, (2002).

As mentioned, there is no one single definition for e-Government services. The World Bank defines e-Government services as "the use of ICTs to promote more efficient and effective government, facilitate more accessible government services, allow greater public access to information, and make government more accountable to citizens" Basu, (2004). Further, "e-Government services might involve delivering services via the Internet, telephone, community centres (self-service or facilitated by others), wireless devices or other communication systems. But e-Government services is not a shortcut to economic development, budget savings or clean, efficient government" Al-Sebie & Irani, (2005).

According to the World Markets Research Centre, "e-Government services refers to the delivery of information and services online via the Internet" Sharma, (2004) similarly, Accenture consulting explains, "e-Government services refers to the delivery of information and services online through the Internet or other digital means. Many governmental units have embraced the digital revolution and are putting a wide range of materials from publications and databases to actual government services online for use by the citizens" Darrell, (2007b).

The United Nations holds that an e-Government service is not a tool limited to richer countries. Indeed, some of the most innovative uses of the Internet in governance are appearing in the Libya, as ICTs are being used to streamline government and connect it more closely with the people it is supposed to serve United Nations, (2005).

The Gartner Group describes e-Government services as "the continuous optimisation of service delivery, constituency participation, and governance by transforming internal and external relationships through technology, the Internet and new media". Mark Forman, Associate Director for Information Technology and e-Government services at the Office of Management and Budget (OMB), has defined e-Government services as "the use of Internet technology and protocols to transform agency effectiveness, efficiency, and service quality" Seifert and Relyea, (2004).

A report to the U.S. congress on e-Government services (2003) stated that an e-Government service means different things to different people. Some observers define e-Government services in terms of specific actions: using a government kiosk to receive job information, applying for social security benefits through a web site, or creating shared databases for multiple agencies, as examples. Other observers define e-Government services more generally as automating the delivery of government services. While perceptions of e-Government services vary widely, some common themes can be identified that capture its evolutionary nature. Generally, e-Government services is designated as any transaction that involves the government and that is carried out, even partially, using electronic means Vassilakis et al., (2003). According to the research, e-Government services plays an important function in mediating government actions and its role will continue to grow as communication technologies become more widespread. already, communications technologies change the way that governments operate by facilitating information dissemination, communications, and transactions Vassilakis et al., (2003).

The Pacific Council on International Policy has defined e-Government services broadly, as the use of ICTs to promote more efficient and effective government, facilitate more accessible government services, allow greater public access to information, and make government more accountable to citizens Pacific Council, (2002). E-Government services might involve delivering services via the Internet, telephone, community centres (self-service or facilitated by others), wireless devices, or other communication systems Hachigian, (2002).

Jones and Crowe, (2001) stated that e-Government services simply automating existing services is not enough. Government services and the organisational structures that surround them must be transformed if the full potential of e-Government services is to be realised. Most government initiatives focus on increasing efficiency and soliciting feedback. Electronic government is therefore seen as essential to aid businesses in their interaction with the state Jones and Crowe, (2001).

Ultimately, e-Government services simply means a new way of delivering government services to citizens, businesses, and other partners anywhere, anytime utilising different channels of ICTs to improve efficiency, effectiveness, and accountability. It is an

evolution and a continuous process that involves costs, risks, and anticipated benefits Sweisi & Adams, (2006).

The researcher defines e-Government services as a means of citizens, businesses, agencies, and the other organisations been able to access government services anytime, anywhere, through different e-channels in order to, reduce cost, time, and effort and enhance performance, speed, efficiency, effectiveness, accountability, transparency, and continuous improvement. This definition in comparison with others seems to encompass and involve all stakeholders, government and also embrace the potential benefits of e-governments services. Against this background, the researcher prefers to follow this definition.

2.3.1 Features of E-Government Services

There seems to be still no one single landscape for e-Government services. Knowledge and experiences are still accumulating and e-Government services seem to be taken shape. Some governments around the world have carved a well-developed and mature e-Governments services Turban, (2000). The most common features and interesting characteristics of e-Government services include but are not limited to the following aspects:

1. Transformational: Harnessing technology through personal and organisational leadership to change the way government works, rather than merely automate existing practices Sweisi and Adams, (2007).
2. Seamless access: Seamless access means citizens, businesses, and other partners receive government services without the need to know how their government is organised, what a department or agency does, or whether central or local government exercises a particular function Gilbert et al., (2004).
3. Multiple access channels: Citizens, businesses, and other partners can get government services through internet, mobile phones which is almost available in developing countries such as Libya rather than access to the internet and televisions Sharma, (2004). And to those who choose not to use government online services will still be able to interact with their government using traditional channels (for example, visiting a government office).
4. Anywhere, anytime: All government services, which can be practically and legitimately delivered electronically, are available anywhere (at home, at work, in

schools, in libraries, and other convenient community locations), anytime (24 hours a day, seven days a week) (Rose, (2005).

5. Easy to use: Connecting people with central, regional, local, and international governments according to their preferences and needs Reddick, (2005).
6. Collaborative: Riley, (2003) e-Government services solutions are developed collectively and openly among public, private, non-profit, and research partners, on the basis of their experience and expertise.
7. Common infrastructure: Integrated service delivery with seamless business processes and technologies that can interoperate Gueorguiev et al., (2004).
8. Integration mechanisms and tools: Software applications and data that support the integration of common business processes Gilbert et al., (2004).
9. Government processes and systems are based on e-technology: Common e-solutions are established, such as e-billing, e-procurement, e-taxing, etc Chin, (2000).
10. Easy feedback to government: Reddick, (2005) Electronically delivered services allow easy interaction, collaboration, and feedback between government and its customers (citizens, businesses, and other partners) on content, quality, and satisfaction.
11. Open, transparent and inclusive policy development processes: Scholl, (2001) All stakeholders (government, citizens, businesses, interest groups, and other partners) are enabled to have increased consultation, discussions, and collaboration for the development of government strategies and policies utilising new technologies.
12. Innovative and results-oriented: e-Government services emphasises speed and harnesses the latest advances in technology Concept and Practice, (2004).
13. Cost-effective: Cost-effectiveness may be achieved in the long run through strategic investments that produce significant long-term efficiencies and savings Jellinek and Cain, (2003).
14. Authentication and security: The technology protects customers' information and privacy by ensuring that people who are accessing information or a service are authorised Nardelli et al., (2003).
15. Privacy: Citizens, businesses and other partners' privacy is maintained and respected according to the appropriate standards for privacy, which is required for e-Government services to grow and serve the public Miller and Belanger, (2001).

2.3.2 Some of U.S. Stakeholders Perspective on e-Government Services

Freeman, (1984) stated that the involvement of stakeholders from the vision is crucial since they have the maximum influence on legislation and/or polices. They can support or block the project Freeman, (1984). The project implementation team should use the stakeholders and network theories to ensure the smooth transformation see section.

Some U.S. government officials' perspective of e-governance seems to be relevant to this discussion because of their success rate in implementing e-Government services. Below are some examples of statements made by members of the U.S. government and the various stakeholders who interact with the U.S. government which seems to support the successful implementation of e-Government services as postulated by Freeman, (1984).

1. Fred Thompson, Former Senator: "The government could do more to harness technology to make the government more results-oriented… I congratulate the Council for Excellence in Government for providing an e-Government services blueprint".
2. Stephen Goldsmith, Special Advisor to the U.S. President for Faith-Based and Community Initiatives: "…electronic government will not only break down boundaries and reduce transaction costs between citizens and their governments but between levels of government as well" Teicher and Dow, (2002).
3. Patrick Leahy, Senator: "The Internet offers us a unique opportunity to allow the American people to have everyday access to public information. Initiatives like this harness the power of the information age to help open up our government to everyone" Cambridge, (2005).
4. Scott Harshbarger, President of Common Cause: "e-Government services hold the promise of making government more accountable to its citizens. I applaud the Council for Excellence in Government for leading this effort to bring government closer to the American public through technology" Kendall and Rylander, (2004) .
5. Joseph Lieberman, Senator: "e-Government services are the wave of the future, and the Council for Excellence in Government deserves enormous credit for energetically promoting the issue with its consensus building approach" Moynihan, (2005).
6. Sharon Dawes, Director of the Centre for Technology in Government at SUNY-Albany: "e-Government services goals are focused on the future of our whole

society...the inclusiveness of the Council's e-Government services initiative moves us all in this direction" Teicher and Dow, (2002).

7. Tom Davis, Congressman: "e-Government services, done right, should mean better government; at a lower cost to taxpayers...this document from the Council for Excellence in Government is an important step toward that goal".
8. Pat Gross, Chairman of the Executive Committee and Co-founder of American Management Systems and Co-chair of the Intergovernmental Technology Leadership Consortium: "e-Government services is revolutionising the relationship between business, government, and citizens, stimulating economic growth and providing dramatically improved services to constituents nationwide. The Council deserves enormous credit for mobilising this e-Government services effort" Teicher and Dow, (2002).

2.3.3 Prior Research on e-Government Services

During a review of previous research, it was found out that many researchers have already focused on the challenges and barriers faced by developing countries such as Libya in creating and implementing e-Government services initiative.

In the (Table 1) below provides an overview of a wide selection of literature that focuses on different challenges of e-Government services. It includes examples of e-Government services research into the use, its adoption and suggestive models. A fuller list of references can be found in the reference section at the end of the thesis.

Table 1 Previous Global Literature on e-Government Services

Topic of e-Government services research in other countries	Location of the research	References
The availability and level of sophistication of online services, usage, perceptions and barriers to utilisation that have not been treated previously.	***Germany, Ireland, Denmark, UK, Italy, Netherlands, Switzerland, Slovenia, Poland, Hungary, Slovakia, Romania, Bulgaria, Estonia, Lithuania, Latvia, and Czech Republic***.	***(Graafland-Essers and Ettedgui, 2003)***
E-Government services in Africa: promise and practice. *gap Model of e-government.*	***Manchester University, Uk.***	***(Richard Heeks, 2002)*** ***(Richard Heeks,***

		2003)
The e-Participation landscape and document it.	***European Research Workshop.***	***(Helen et al, 2007)***
Understanding e-Participation contemporary PhD e-Participation research in Europe.	***Europe research In Uk about Sri Lanka.***	***(Pauliina et al., 2006)***
Theoretically based study could be successful application of ICT in the public sector.	***Manchester, UK***	***(Stanforth, 2006)***
Trajectories of e-Government services projects, political interaction of stakeholders.	***Manchester, Uk.***	***(Heeks and Stanforth, 2007)***
Procedure model for e-government.	***Germany***	***(Becker et al., 2006)***
Collaboration and partnership: A review and reflections on a national project to join up local services in England.	***England, UK.***	***(Gannon-Leary et al., 2006)***
Will B2C e-commerce developed in one cultural environment be suitable for another culture?	***Portsmouth, Uk***	***(Su and Adams, 2005)***
Beyond e-Government services the world's most successfully technology-enabled transformation.	***Cabinet Office London, Uk.***	***(Hamilton, 2005)***
Information Systems and developing countries, failure, success, and local improvisations.	***Manchester, UK***	***(Heeks, 2002)***
To identify the factors that influence adoption of e-voting services by citizens between the ages of 18-24. By uses model of e-Government services adoption to assess young voters' intention to use an online voting system.	***Washington, USA***	***(Schaupp and Carter, 2005)***
E-Government maturity model	***McLean, Virginia, USA***	***(Booz and Hamilton, 2001b)***
US Performance-based laws: information technology and e-Government services reporting requirements.	***Washington, DC, USA***	***(Mullen, 2005)***
A paradigmatic and methodological examination of information systems research from 1991 to 2001.	***Louisiana State University, USA***	***(Chen and Hirschheim, 2004)***

A primer on e-Government services: sectors, stages, opportunities, and challenges of online Governance (CRS report for congress).	***The Library of Congress, USA***	***(Seifert, ND)***
Government must first understand the factors that influence citizen adoption of this innovation.	***Virginia USA***	***(Carter and Belanger, 2005)***
This research effort to understand the adoption of e-Government services tends to be from a governmental point of view.	***Iowa. USA***	***(Chen and Thurmaier, ND)***
This article examines citizen interaction with e-Government services.	***USA***	***(Reddick, 2005a)***
Applying stakeholder theory (ST) to e-Government services: benefits and limits (applying ST, that is, on a private sector entity, to public sector organisations, and, in particular, to e-Government services settings)	***Centre for Technol. in Gov., New York State Univ., Albany, NY, USA1.***	***(Scholl, 2001)***
2. E-Government services: A special case of ICT-enabled business process change (Business Process Change (BPC), induced and enabled by ICT. With the unfolding of e-Government services)	***USA***	***(Scholl, 2003)***
A content analysis study was conducted to determine the status of government websites of three - using establishment year, visibility and usability attributes.	***East African countries - Kenya, Tanzania and Uganda***	***(Janet, 2004)***
Knowledge Management in rural communities in Africa.	***Society in Eastern, Central and Southern Africa.***	***(Ikoja-Odongo, ND)***
Factors that affecting m-government use by citizens, business and government; and it highlights implementation challenges.	***South Africa.***	***(Maumbe and Owei, ND)***
e-Government services in @frica prospects, challenges and practices, (e-Government, readiness)	***Swiss Federal Institute of Technology in Lausanne, Switzerland,* African countries are Mauritius, Ethiopia and Rwanda**	***(Kitaw, ND)***
Introduce the main five challenges to implementing e-Government services project in developing nations, which are, people awareness, trust, technical challenges, change culture, and participation.	***Libya***	***(Sweisi and Adams, 2006)***
Proposed framework to manage the change to e-Government services	***Libya***	***(Sweisi and Adams, 2007)***

(Lessons from Libya) the seven e-Government services roadmap elements to ensure successful e-Government, services implementation.		
e-Government services to support vaccination programmes: Libya, a successful implementation (e-Government services, Libya, SMS, vaccination programme, social networks, social responsibility)	***Libya***	***(Sweisi et al, 2007)***

The majority of the previous research covers activity in the United States and in European countries. A lesser number of studies focus on African and Middle Eastern countries, and none so far considered Libya (other than the three to which the author of this report has contributed). The above table shows that the previous research papers focus on culture, technology and lack of awareness as factors that affect the successful implementation of e-Government services.

However the factors identified in the previous research seem to be incoherent and generalised. The relevance of the previous research to this study is to give the researcher an overview of what has been done previously and also give the researcher what gaps need to be filled particularly with respect to Libya. During the problem definition in (Chapter One) it was identified that Libya as country has its own peculiar problems and this include: protracted trade embargo, scattered cities and towns in a large area as well as unique social dynamism. This thesis aims at filling these knowledge gaps and also contributes to the already existing knowledge about e-Government services.

2.3. 4 Stages of e-Government Services Development

Various experts and e-Government services performance analysts around the world recognise e-Government services development as a continuous and linear progression, with countries moving through four, five, or even six levels or stages of advancement. It seems that the most common development and advancement stages adopted by governments include: emerging, enhanced presence, interactive presence, transacting, and seamless presence. These five stages are described below with references:

1. Emerging Presence: In this stage, an official government online presence is established. The government commits to its involvement in e-Government services and establishes a formal but limited web presence through a few independent government web sites. These web sites usually provide citizens, businesses, and other users with static organisational or political information Darrell, (2007b). Sites may include contact information, telephone numbers, addresses, etc.
2. Enhanced Presence: In this stage, a government's online presence begins to expand as its number of official websites increases and information becomes more dynamic. Content is enriched and consists of specialised information that is frequently updated. Government publications, legislation, and newsletters are available. Search features and e-mail addresses are also available Siau and Long, (2005). Web sites usually link to other official pages (i.e., a site for the national or local government may link citizens, businesses and other users to ministries and other government departments) Darrell, (2007b).
3. Interactive Presence: In this stage, a government's presence on the Internet expands dramatically with access to a wide range of government institutions and services Krull and Praxis, (2003). More sophisticated levels of formal interaction among citizens, businesses, and government service providers are present. Citizens and businesses can download forms, post comments, e-mail government officials, and interact through the web. The content and information is regularly updated and the capacity to search specialised databases is available.
4. Transactional: In this stage, secure sites and user passwords are present where citizens, businesses, and other users can actually pay for services and other transactions online Stowers, (2001). Complete and secure transactions are available for services such as obtaining visas, passports, birth and death records, licenses, permits, paying parking fines, automobile registration fees, utility bills, taxes, etc. Digital signatures may be used to facilitate doing business with the government.
5. Seamless or Fully Integrated Presence: In this stage, a capacity is developed to instantly access any government service in a unified package Siau and Long, (2005). Full integration and clustering of fragmented e-services across administrative boundaries along common needs exists.

Ministerial/departmental/agency lines of demarcation are removed in cyberspace Weerakkody and Dwivedi, (ND).

The above stages are inter-related and many at times inter-dependant on each other. For example a government website needs to be established with available information and services of government activities and then followed by continuous development and improvement till the fully integrated stage is reached.

2.3.5 The Purpose, Potential, and Promise of e-Government Services

The transformation to e-Government services brings a great potential to improve the quality of service delivery to citizens, businesses, and other partners. It makes it easy to obtain government services and helps to improve government efficiency, effectiveness, and responsiveness. A study by Accenture Consulting 2003, (P, 87) has found significant differences among countries in the maturity of their e-Government services efforts Accenture, (2003). Perhaps the key finding, however, is that even the most mature countries have tapped less than 20% of the potential of e-Government services Butt and Persuad, (ND).

The main advantage of e-Government services is increased availability of government services beyond the traditional working days Carter and Belanger, (2005). It provides quicker delivery of government services and easier access by citizens and businesses. These significant improvements will not necessarily lead to immediate, realisable cost savings. However, e-Government services can improve the delivery of services across all levels of government: local, regional, state, and central. Gradually, it will help integrate fragmented public services and improve access and connections between citizens, businesses, and their government West, (2000).

E-Government services helps in streamlining traditional service delivery channels that may help government to realise savings in the long run where electronic transactions are considerably less costly than face-to-face ones Carter and Belanger, (2005). Successful flexible remote working hours (virtual offices, working at home, etc.) have the potential to realise increases in productivity in the long-term and may lead to savings in overhead costs Misra, (2005). Implementation of electronic payment systems has the potential to improve cash flow and may increase income.

To summarise, e-Government services provides opportunities to transform the traditional delivery of services to three main groups: The communication is a two way affair which is illustrated below:

1. Government-to-Citizens (G2C), and Citizens to Government (C2G): e-Government services can provide its citizens with one-stop points-of-service that make it easy to access high-quality government services Bose, (2004). It helps to increase citizen participation as stakeholders in the governance process, which may lead to increased public confidence and strengthen the relationship between the government and its citizens Jones et al., (2004).
2. Government-to-Business (G2B) and Business to Government (B2G) e-Government services can reduce government's burden on businesses by eliminating the redundant collection of data and better leveraging e-business technologies for communication Moon, (2002).
3. Government-to-Government (G2G): e-Government services makes it easier for local and regional governments to meet reporting requirements and participate as full partners with the central and federal government in citizen services, while enabling better performance measurement Layne and Lee, (2001). Better uses of modern technology help to reduce costs and improve the quality of government administration, by using industry best practices in areas such as supply-chain management, financial management and knowledge management. Other levels of government will enjoy significant administrative savings and will be able to improve programme delivery because more accurate data is available in a timely fashion Moon, (2002). All government institutions will be able to improve effectiveness and efficiency, eliminating delays in processing and improving employee satisfaction and retention.

2.3.6 The Results of e-Government Services

An effective transformation to e-Government services should result in significant improvements in the long-term as well as some tangible results in the short-term, mainly in the following areas:

1. Simplifying the delivery of government services to citizens and businesses Moon, (2002);

2. Eliminating layers of government management (i.e., gradual elimination of bureaucracy and hieratical structure and empowerment of government employees across layers) Sharma, (2004);
3. Enabling collaboration and interaction among government employees to create synergy utilising all available resources Brinkerhoff, (2002);
4. Making it possible for citizens and businesses to easily find information and get services from the government Layne and Lee, (2001);
5. Simplifying business processes and reducing costs through integrating and eliminating redundant systems Channabasavaiah et al., (2004);
6. Streamlining government operations to guarantee rapid response to citizens and businesses needs Halchin, (2004);
7. Enabling the achievement of the government's development of goals and objectives Sweisi and Adams, (2007).

The above literature findings may go a long way to help the researcher to provide guidelines for use in Libya taking into consideration all the above in implementing e-Government services project. For instance making it possible for citizens to easily find information and simplifying business processes have the potential of eliminating bureaucracy, bribery and corruption and nepotism identified in (Chapter One) as being a common practice in Libya

2.3.7 The Nature of e-Government Services

There is a great variation in the services available on e-Government services websites Darrell, (2007b). e-Governments services can deliver a wide range of online and offline services to citizens (G2C), to businesses (G2B), and to other government and government agencies (G2G) Basu, (2004). The range of services depends on the readiness of the government and the readiness of its stakeholders (citizens, businesses, and other partners) to make the transformation Sweisi and Adams, (2007). This readiness is a function of different overlapping and interacting variables (human knowledge and skills, capital, ICT infrastructure, literacy rate, priorities of government, pressing needs of citizens and businesses, etc.).

West, (2007) conducted a survey that showed several services that were already available on e-Government services web sites Darrell, (2007a). Some, but not all, of these services can be found in Table 2.

Table 2 List of Current e-Government Services

No	Sort of Online Services	The Location
1.	Online tax prevalent collection.	(Belgian, Pakistani, Philippine and French economics Ministry).
2.	Online complaint forms.	(Malaysia, The Netherlands, New Zealand, Philippine, and the South Africa).
3.	Applications for and renewal of licenses and permits. Applications for work permits and learner's licenses, and online booking of huts and campsites.	(Mauritius). (New Zealand).
4.	Renewal for electrical workers or radio licenses, government jobs, order publications for the tourism board.	(Slovenia, South African, Australian, Slovakia, and Switzerland).
5.	Online grants on the web.	(New Zealand and USA).
6.	Electronic document filing and a digital signature system to enable its e-filling of documents and offerings.	(Slovakia).
7.	Trademark applications offering unique online service filing of documents for reduced fees through "e-Trademark".	(Switzerland and Slovakia).
8.	The sending of SMS text messages for a fee.	(Republic of Congo).
9.	Locating public toilet maps.	(Australia).
10.	Betting site for basketball games.	(Philippines).
11.	Online classes, tests and sites to receive help with homework.	(Luxembourg).
12.	Search for national electronic injury surveillance system database for case studies of injuries to people by consumer products.	(U.S.).
13.	"Conversation forum" available to visitors where you can have an instant message conversation with agency officials;	(Mexico).
14.	Elect to erase all cookies placed on their hard drive periodically.	(Colombia).
15.	Webcams of streets and squares all around the country on a live feed.	(Turkey).

16.	Interactive online video that shows how to navigate pages while a voice-over explains the different services.	(Peru).
17.	"Conversation bubble", "quick review", and "Did you know?" for links to interesting services and facts at the top of each page.	(Czech Republic).
18.	The page contains a unique theme that allows and gives current time and date, weather, and exchanges information at a glance. Online chat sessions.	(India).

Resource *Darrell, (2007)*

The growth of online services that deal with financial concerns has been significantly slowed due to the difficulty of using credit cards and digital signatures online Drake, (2003). There is a huge potential for online purchase of goods and services through the use of credit cards Benton, (2003). The use of credit cards online for government services is increasing, but the usage is still very low considering the potential. Of the numerous government web sites that were analysed, just 5% accepted credit cards and only 1% allowed digital signatures for financial transactions West, (2004) and Darrel, (2007).

Some unique online services offered in different countries include job applications (Australia), forms to change one's postal address (Canada), ordering stamps and searching for stolen vehicles (Lithuania), online personal and union registration (UK), and information on wanted persons (US, UK) Muir and Oppenheim, (2002) and Darrell, (2007b).

There are several other online services, such as health care services, services related to social security, services related to the labour force, and education services. Other online services include the online ordering of publications, databases that include phone, physical address, and e-mail address contact information McWilliams et al., (2003), the ability to obtain printouts of a form to mail or take to a government agency, justice-related services, the filing of complaints, e-procurement that involves online bidding and procurement, and links to other sites Davila et al., (2003).

An e-Government services survey conducted by Darrel (2007) for the Taubman Centre for Public Policy at Brown University discovered that only 28% of government web

sites around the world offer services that are fully executable online; 96% of websites provide access to publications, 29% show privacy policy, 23% have disability access, and 80% have links to databases. Of this group, 5% offer one service, 1% has two services, and 2% have three or more services. Some 92% have no online services. North America (including the United States, Canada, and Mexico) was the area offering the highest percentage of online services, as 62% of the sites analysed had fully executable online services. This was followed by Asia at 36%, Western Europe at 34%, the Pacific Ocean islands at 28%, the Middle East at 29%, Eastern Europe at 11%, South America at 46%, Central America at 22%, Russia and central Asia at 10%, and only 9% in Africa Darrell, (2007). This data is expressed in (Table 2).

The conclusion by the researcher from the (Table 2) above and the paragraphs that followed suggests that government websites did not reach the fully integrated level and there is no website in the findings that shows there is full interaction between government and other partners.

Full interaction indicates that, if total people in that country used full on-line services and interact firmly public/private sector staff. As a reference in Dubai where the government is providing approximately 80% services from traditional way to online but still high percentage of local people not used because not aware of it.

Table 3 Percentage of Government Sites Offering Online Services by Global Region

Year	**2007**
Region	**%**
North America	62
South America	46
Asia	36
Western Europe	34
Middle east	29
Pacific Ocean Islands	28
Central America	22
Eastern Europe	11
Russia/Central Asia	10
Africa	9

Table 4 *Darrell,(2007)*

2.3. 8 Resources Needed for e-Government Services

As the researcher mentioned above, transferring a government to an e-Government services needs an appropriate plan. The transformation to e-Government services requires the efficient usage of different resources. The main resources include but are not limited to the following:

1. Human capital: Human capital (knowledge and skills) with specific competencies is needed to plan, manage and operate the transformation to e-Government services McDaniel, (2005). At the same time, human capital is needed to realise and take advantage of e-Government services.
2. ICTs with adequate infrastructure: Suitable ICTs are needed to enable the transformation online Stead et al., (2000); Sweisi and Adams, (2006), and adequate infrastructure is needed to enable to interaction and collaboration among government, citizens, businesses, and other partners Sweisi and Adams, (2007).
3. Capital: Funds are needed to acquire the required ICT Malhotra, (2001), create and/or improve the necessary infrastructure, train people to plan, manage, operate, and benefit from the services of e-Government services. And acquire the required skills and competencies Wimmer, (2002b).

2.3.9 Risks of e-Government Services

The transformation to e-Government services helps to realise many benefits, but at the same time, there are numerous risks and shortcomings involved which relate to each other Heeks, (2003). For example using website may lead to risks of using similar websites hosted by hackers or fraudsters. Governments inevitably pursue certain risks but the challenge is to minimise and mitigate the risk Ciborra and Navarra, (2005). The majority of risks involved in e-Government services include but are not limited to the following:

1. Failure to overcome resistance, challenges, and problems to change Gauld et al., (2006); Gauld et al., (2006) and Heeks, (2002a);
2. Lack of human awareness (knowledge and skills) necessary to plan, manage, and operate e-Government services West, (2004); Fitzgerald, 2005a and Abdulrazzaq et al., (2003).

3. Security problems concerning access to government, citizens, and business information Lee and Whang, (2005); Mitrakas, (2007); Hof, (2005) and Chadwick, (2006);
4. Failure to realise benefits as a result of a lack of readiness to change by government, citizens, and/or businesses Gauld et al., (2006a); Fitzgerald, (2005); Heeks, (2002d); Heeks and Stanforth, (April 2007) .
5. Lack of funding necessary to acquire new technologies, lay down infrastructure, improve the skills of human capital, and hire the required external skills Tat-Kei Ho, (2002).

Moreover, e-Government services will be shaped not only by the new possibilities offered by technology, but also the new threat to the economy and personal security of individuals and organisations Basu, (2004). The Internet does away with borders, letting individuals interact dynamically with others across the globe. This interaction opens unprecedented doors of freedom and economic opportunity for all peoples of the world who gain Internet access. Yet for all the positive possibilities, the downside is that criminals and those ideologically bent on attacking the economy and cultural stability now can operate on a global scale, reaching through the Internet into virtually every wired community on earth Ebrahim and Irani, (2005).

From the above studies it can be observed that, effectively adopting ICT is required to support e-Government services. Political support, financial support, and the development of understanding for e-Government services projects are further essential as keys for success Ndou, (2004). Further, involved officials, businesses, agencies, and other sectors are principal components to the e-Government services project's success Sweisi and Adams, (2007b).

Researchers must probe this innovation from different angles in order to gain an exhaustive understanding of e-Government services. However, to pursue an e-Government services project, stakeholders in Libya should ensure that they prepare correctly for an e-Government services initiative Manktelow, (2006). If e-Government services are aimed to be an innovation for the benefit of everyone, then Libyan team that will lead the implementation must assure that an e-Government services initiative includes participation from everyone – all sectors, citizens, businesses, and other organisations. To build a collaborative vision of e-

Government services, Libyan government must obtain input from all different sectors about the structure of e-Government services. In doing so, governments will mitigate risk and increase the likelihood of success Sweisi and Adams, (2008).

2.4 Summary

This chapter has touched on the various fundamental contexts in e-Government services implementation, the role of e-Government as well as the nature of governments. Knowledge of which has provided a deeper understanding for the researcher to link up the problem definition with the thesis and also help to direct how the primary data could be used to evaluate the findings from this chapter. In addition it has also focused on previous research that has been carried out in the thesis area to be able to identify where there are gaps in knowledge. With respect to particular problems of Libya the chapter has explained in details the vastness of area, trade embargo and the socio-cultural dynamics which the previous studies failed to pay particular attention to.

Evidence of stakeholder perspectives were also investigated to establish the importance of e-Government services and its implementation processes taking into consideration the need to involve stakeholders. As said by Freeman (1984) that the importance of stakeholders should not be under estimated since they can block or support the implementation of the project. Awareness of this will help the researcher in an attempt to formulate guidelines for the successful implementation of e-Government services in Libya.

Additionally, the chapter investigated the various levels of e-Government services. It was found out that most e-Government services fail to reach the full integrated stage Darrell (2007). This suggests that e-Government services should be a continuous process and development. Again risk of e-Government services was identified and discussed. It was establish that with all the good intentions and benefits of e-Government services there are also potential risks that may lead to failure the project. Awareness of this is important with respect to Libya where trust seems to be a challenge. Having a prior knowledge on this will help to deal with the potential risk in order to increase the trust and confidence to use e-Government services in Libya. Findings from the review of literature also highlighted the enormous resources needed to implement e-Government services project in terms of human capital as well financial costs.

In conclusion the chapter has provided the relevant information to enable the researcher to fill the gap (Chapter One Section 1.11) by identifying the potential challenges. Also findings from the above helped the researcher to come up with relevant information that may help formulate guidelines that may militate against the successful implementation of e-Government services in Libya which will be discussed in the next chapter.

CHAPTER 3
IDENTIFICATION OF CHALLENGES IN E-GOVERNMENT SERVICES

3.1 Introduction

This chapter is the continuation of the literature review. It attempts to review existing literature on the primary challenges described in chapter one and how this may impact on the successful implementation of e-Government services in Libya. Examples of the challenges include: awareness, trust, technical, culture and participation. In addition, the chapter also touches on the need for the Libyan government to start the implementation of e-Government services using strategic management principles leading to the identification of secondary challenges such as assessment of needs and readiness, providing roadmap and set e-Government direction. Existing literature on management will be reviewed to help the researcher come up with effective guidelines to deal with the potential secondary challenges unique to Libya and also attempt to answer the research question in (Chapter One).

3.2 Challenges of E-Government Services

Chen and Gant, (2001) postulated that the transformation from traditional government to e-Government services is complex, touching on the political, cultural, organisational, and technical aspects of government and other public sector providers. According to Chen and Gant, (2001) this transformation is pressured from the bottom-up, as the expectations of citizens and businesses increase, as well as from the top down, as governments seek to reform and modernise their organisations. Aucoin, (1990) on the other hand argued that changing the way governments work complicates the transformation process and produces a set of overlapping priorities and programmes. The assertions by the above researchers seem to make it imperative for both developed and developing countries such as Libya to take advantage of the benefits of e-Government services as global competition deepens and citizens seek better quality of life from their governments. Even though Libya as a developing country has initiated some e-Government services projects, it seems important for the government to hasten the e-Government initiative process for the country to achieve its development goals as identified in the (Chapter One).

Like all complicated reforms, simply drafting a law or issuing an order cannot lead to a successful implementation of e-Government services Al-Omari and Al-Omari, (2006) and

Strejcek; Theil, (2003) further shared the view that complicated reforms requires changing how officials think and act, how they view their jobs, and how they share information between departments (G2G), with businesses (G2B), and with citizens (G2C). Sweisi and Adams, (2006) seem to agree that such complicated reforms requires re-engineering of government's business processes, both within individual ministries and agencies and across governments. Both researchers Sweisi and Adams, (2006) and Ai-Omari and Al-Omari, (2006) asserted that e-Government services should respond to changes in the external and internal environment. The views shared by the above researchers clearly explain how a society, its citizens, and businesses could deal with their government especially in the 21st Century where information seems to be changing radically all over the world. Particularly in developing countries like Libya where access to information seems to be exclusive to government officials. The findings above emphasise the importance of sharing information from bottom-up and from top-down. It is worth mentioning here that effective e-Government services may play crucial role to facilitate information sharing at a more cost effective and faster rate.

If the findings by the above researchers are true then it suggests that Libya as a developing country may face potential challenges in implementing an e-Government services initiative. For instance Libya already seems to have unique political and socio-cultural set up as described in (Chapter One) which could resist any move that seems to contradict what is perceived as conventional practices. However, Booz and Hamilton, (2001) posit that challenges could be overcome if there is adequate preparation within the country for the transition to e-Government services. Booz and Hamilton, (2001) argued further that potential fundamental challenges that may militate against successful implementation of projects like e-Government services could be viewed from three different perspectives and identified these perspectives as: primary and secondary challenges as well as suitable theories. According to Abdulrazzaq et al, (2003) and Booz and Hamilton, (2001) primary challenges have five elements and described them as; people awareness, trust, technical, cultural change and participation. The rest of this chapter among other things will focus on the detailed review of literature on the various elements within the three perspectives mentioned.

3.3 Perspectives on Primary Challenges

Since there is no single definition of awareness it could be described as individuals or group of people noticing what is happening around them or happening in the place where they live" For the purpose of this study people awareness will be attributed to Libyan citizenry noticing e-government services or see them happening in the place they live.

Abdulrazzaq, et al. (2003) contends that awareness among stakeholders and the citizenry of a country like Libya is the most important factor that must be in place for the successful implementation and adoption of projects such as e-Government services. The views expressed by the researcher seems to be justified in the sense that for any implementation of a project it is important for all stakeholders to be informed of what is going to happen and why. It could be argued that creating people awareness and informing them of the potential benefits they may derive from a new project such as e-Government services will enhance their preparedness to embrace the change rather than resisting it. The researcher is of the view that awareness creation seems to be very crucial however, added that it is equally important for policy makers and government demonstrate their commitment of such projects. The view of the researcher could draw support, involvement and participation of all stakeholders in an attempt to implement e-Government services especially in a country like Libya where lip service from policy makers seems to be very common and trust of their leaders seems to be ebbing away.

A study by Gilding and Critchley, (2003) demonstrated that Australians trust ICT information from universities but not ICT information from their government. The postulation by the researchers may happen when access to the electronic services and systems is to some extent not delivering what it promises to deliver. It could make the user feel like a victim of social injustice Gilding and Critchley, (2003). The process affects their trust in the government in a negative manner. Fandy, (2000) examined the impact of Internet in the Middle East and came to the conclusion that the Arab population is willing to use new technologies such as using the internet/computer; however, when it comes to the notion of trust of their governments', many Arab citizens could be quite hesitant. The view expressed by Fandy, (2000) seems to give credibility to the earlier view expressed by the researcher that awareness creation may not be enough to win the support and trust of stakeholders with respect to projects like e-Government services. The need for policy makers to demonstrate

real commitment and deliver services that matter to the people may play a crucial role in the successful implementation of e-Government services in Libya. Again the conclusions drawn by Fandy, (2000) may mean preparedness for Libya which is an Arab country to support and use e-Government services initiative if the government demonstrate commitment and trust. It is equally important if the citizenry perceive that the facility delivers what it promises to the benefit of users Fandy, (2000).

Technical challenges in this research may be described as the existing infrastructural outlay and channels that support the effective delivery of e-Government services. Examples of such infrastructures may include computers, internet, telecommunications tools and constant electricity that may power those channels. It is worth mentioning that infrastructural provision may be a crucial issue that can sometimes be costly to build and manage in a developing country such as Libya where government are already over burdened with other priorities and resources are seemed to be limited. The problem could be complicated in a country like Libya, where there is a large area yet relatively few people, delivering such technological infrastructure could cause a strain on the financial health of the country. Even though the Libyan government is making the effort to deal with the acute technological challenges but it seems more needs to be done. For example in 2005, the Libyan Ministry of Education provided 160,000 computers to primary and secondary schools, nonetheless that was seen as a 'drop in the ocean' Sweisi & Adams, (2006). In addition individuals may find it difficult to afford such technologies due to high poverty levels.

Another challenge that may be interconnected with technological challenges could be the issues of security of users of e-Government services. Nardelli et al., (2003) advocated that security is absolutely crucial in order to attain citizens' trust. The inability to provide appropriate technologies could result in the provision fraud prone e-Government service Nardelli et al., (2003). For instance in the United States which is a developed country with modern technological infrastructure claims that inappropriate technologies has led to serious security breaches on those who use the internet to deliver services. In the US, 32% of 395 IT professionals who were interviewed for a study were of the opinion that e-Government services programmes were not secured enough against hackers, which negatively affected the adoption of e-Government services Mauser, (1996). Legislations related to online transactions could play an important role to avert security challenges Mauser, (1996). For

instance France has become one of the leaders in establishing such legislation to protect online users. On January 6, 1978, France passed a law that recognised the security and private rights of individuals in the automatic processing of personal data, be it in the public or private sector Miller & Belanger, (2001). Sweisi and Adams (2006) are of the view that in order to deal with issues on internet security legislations may have to be combined with effective technological infrastructure to ensure efficient delivery of e-Government services.

Stoodley, (2007) defines culture as attitudes and perspectives shared by individuals from a specific country that shape their behaviour and the way they see the world Stoodley, (2007). Lee and Souder, (2000) added that there are various definitions of culture and argued that it is a cause of considerable confusion Lee and Souder, (2000). The views expressed by the researchers make it appropriate to suggest that cultural familiarity is essential when implementing projects like e-Government services that directly or indirectly involve behavioural and attitudinal changes. Ogbu and Simons, (1998) on the hand took the discussion further and identified several determinants of culture; they argued that a group of peoples' social structure, religion, language, education, economic philosophy, and political philosophy determine their culture Ogbu and Herbert, (1998). Against the background of the above findings greater awareness of the various determinants of culture is a step in the right direction to be able to effect a needed change. For example a country's religious and educational systems could serve as an avenues or channels through which changes could be effected.

Libya as a country has its own unique socio-cultural as well as political characteristics which has to be considered when implementing projects like e-Government services which requires the support, trust and involvement of the entire citizenry. As said in (Chapter One) Libya's administrations occupy by corruptions and nepotism which makes the government less trustful. Furthermore, individuals' are not allowed to form political parties. Islam is the main religion and there are some restrictions on what women and minors can do. Knowledge of developing countries such as Libya's culture as Lee and Souder, (2000) said earlier is a key to be able to implement e-Government services which require a significant change in outlook, behaviour and attitudes.

Eyob, (2004) and Dugdale et al., (2005) posited that participation in an activity depends upon the satisfaction participants derive from doing so. Earlier findings in this

chapter seem to confirm that implementing e-Government services in a country like Libya requires substantial financial and material resources. It might therefore be important that all stakeholders take active part, make use and support the project to justify the investment. Fandy, (2000) earlier in this chapter shared the view that Arab countries are well prepared to participate in projects such as e-Government services but further posited that lack of trust could affect participation rate. It seems clear that trust and confidence may play crucial role in people participation of e-Government in an Arab country such as Libya. Again it must be emphasised that all primary challenges may relate to each other rather than seeing them in isolation. For instance culture, infrastructural technology and trust seem to link together to impact on participation. The literature findings suggest that it is important for the Libyan government to gradually improve technological infrastructure while concurrently changing the existing cultural dynamics through the educational system, it could be able to build the trust of the people which may lead to increased participation of new projects such as e-Government services.

In conclusion implementing project such as e-Government services may require a change in attitude and behaviour. The primary challenges identified are: improving awareness, technological infrastructure, change culture, trust and involving people with the project with respect to the Libyan unique factors. Dealing with the above challenges may take a long time to bring about the expected change. However, due to the crucial role of e-Government services can play in the development of Libya, it makes it important that the government launch the project in the short term whilst at the same time dealing with the long term challenges. Notwithstanding the long term challenges explained above there are short term challenges with respect to e-Government services in Libya, which in this study are termed as secondary challenges. The next stage will review literature on the secondary challenges and how to use strategic management principles to identify and explain strategic approach of dealing with the secondary challenges.

3.4 Perspectives on Secondary Challenges

Background of Strategic Management aims to identify opportunities and threats in the external and internal business environment. Wheelen and Hunger, (1986) defined strategic management as “that set of managerial decisions and actions that determines the long-term performance of a corporation” According to Wheelen and Hunger, strategic management

involves five phases: (1) environmental scanning, (2) strategy formulation, (3) strategy implementation, (4) evaluation and control, (5) feedback, and learning process. In order to answer the research question 'How to implement successful e-Government services in Libya' knowledge of strategic management principles and the various phases are crucial since it may form the basis for the researcher to carve out a short term strategic plan to deal with the secondary challenges identified as follows:

1. Assess needs and readiness to change
2. Provide roadmap and set e-Government direction
3. Partnership with private sector
4. Plan the change to e-Government services
5. Overcome resistance to change
6. Improve citizens participation
7. Evaluate performance and communicate progress.

3.4 .1 Assessing Needs and Readiness to Change

In assessing needs and readiness to change Jones et al., (2004) shared the view that before implementing projects like e-Government services it requires the project implementers and policy makers to scan the external and internal environments to assess needs, readiness, and reasons for change. If the concerns expressed by the researchers are true then assessing the needs of Libyan people and their readiness to change from what they perceive as the norm may be one of the secondary challenges that may face the successful implementation of e-Government services. Sensitivity and adaptation to the external and internal environments, as well as the organisational readiness to change, requires the continuous monitoring and evaluation of both environments and the development of special skills and competencies Bourantas, (2007). Assessing the external environment may help to identify the pressing needs of citizens and businesses in light of the changes in the economic, technological, legal, and socio-cultural environment Magee, (1998). It helps government to identify its priorities, needs and assess the readiness or otherwise of its citizens and businesses for the adoption of the change.

Assessing the internal environment helps make the transformation smooth. Government may have to assess its structure, organisational culture, and resources to identify and develop key internal strategic factors necessary to leverage its core competencies to take

advantage of revolutions in ICTs Amit and Schoemaker, (1998). In furtherance Hornsby et al (2002) posits that each society's and government's readiness for e-Government services will depend upon which objectives and specific sectors it chooses as priorities, as well as the resources available at a given point in time.

Basu, (2004) said "*The necessary pre-conditions for e-Government services depend upon a society's most important needs*". For example, the level of infrastructure, legal framework, and human capital needed for e-Government services may vary with the objectives being pursued. Readiness for e-Government services is not only a governmental issue, once the need for e-Government services is identified, it is important to assess the country's preparedness. Assessing e-Government services readiness may require examination of government itself, institutional frameworks, human resources, existing budgetary resources as well as inter-department communication flows.

National infrastructure, economic health, education, information policies, private sector development, and other issues are also factors of society's readiness Sweisi and Adams, (2007b). Even in Libya where problems of low connectivity and human resource development, including low ICTs literacy, are severe, creativity and careful planning can develop specific applications, services, and information that can be delivered in a targeted, useful way to identifiable areas Basu, (2004). Readiness may also start with political will and commitment. Though determining the key conditions depends on the goals chosen, political will – in the form of "e-leadership" – is a prerequisite for any e-Government services McDaniel, (2005). E-leaders must support e-Government services initiatives not only with words but also with actions. They must build political support across the government, push for change and resources, publicly take ownership of the project and commit their time on a sustained basis. To develop such political will, it may be important to demonstrate how supporting e-Government services can lead to greater electoral support from voters Magee, (1998).

Readiness also rests on information policy. It is important also for the government to demonstrate willingness to share information with the public and across government agencies/departments and different levels within them. Smooth, rapid and continuous information-sharing enables government to take a more functional approach to services, as

opposed to the usual department-by-department approach. A government's information policies are a key readiness consideration Lee et al., (2005). Although readiness depends on e-Government services priorities, there are certain factors that demand consideration Basu, (2004) and Al-Omari and Al-Omari, (2006). These factors may include the following areas: The current environment for e-business in the country, including the legal framework and information security, is a key criterion for assessing readiness. Establishing protections and legal reforms will be needed to ensure, among other things, the privacy, security, and legal recognition of electronic interactions and electronic signatures Rees et al., (2003).

A) The transformation to e-Government services requires the efficient deployment of different resources. The main resources that should be assessed and identified may include but are not limited to the following: Human capital. It is essential to have a sufficient number of skilled, ICTs literate personnel, including managers with experience in procuring, evaluating and implementing ICTs solution. Not everything can or should be outsourced to the private sector Gupta et al., (1997). Change management issues must also be addressed as new work practices are introduced. The skills of existing government staff should be assessed to identify their strengths Bhatnagar, (2004), overcome their weaknesses, and identify areas for improvements. Government should assess whether there is any need to hire the services of external people with specific skills and consultants Association of London, (2001).

B) ICTs and infrastructure; Although telecommunications equipment and computers are not the focus of e-Government services, they must be addressed in any e-Government services plan Bose, (2004). The level of telecommunications infrastructure needed will depend on the e-Government services projects pursued Jones et al., (2004). Significant investment in national ICTs infrastructure may be needed for certain e-Government services applications. The existing ICTs and infrastructure should be examined to identify its suitability and adequacy for the change. At the same time, government has to identify any new required technologies and infrastructure and its compatibility with the existing ones Krull and Praxis, (2003).

C) Existing and expected capital and budgetary resources; It is obviously critical to ensure that the resources needed to fully achieve e-Government services goals can be

generated Malhotra, (2001). Also critical is the control of funds – whether the funds are centralised or de-centralised, or whether the funds are consolidated or allocated to many departments. Government has to assess whether it has sufficient funds necessary to acquire and improve ICTs and infrastructure, develop and improve human skills and competencies, and hire any required external skills Khan and Hildreth, (2004).

Understanding current ICTs usage and connectivity may indicate a government's readiness to manage information and e-Government services projects as well as whether the ICTs framework meets global standards. In addition, it may help allow e-Government services efforts to build on previous e-Government services projects that have been successful DiMaggio and Hargittai, (2001). It can be helpful to start with an assessment of how a government currently uses technology and what ICTs resources are available. According to Pentland et al, (2004) as well as Sweisi and Adams (2006) a ICTs snapshot might consider answers to the following questions have any government units' already undertaken successful projects of an e-Government services nature? Why did they work? What are current expenditures on technology? What have been the results? Are different units using compatible platforms? What are the key obstacles facing current projects?

Answers to these questions can provide valuable information about the current state of ICTs, as well as a map of existing good practices. A diagnosis can be a foundation on which to base future projects that will help prevent duplication of e-Government services efforts Cuban et al., (2001), identify economies of scale in e-Government services programmes (e.g., with government-wide intranets and ICTs contracting) and determine a good balance between centralised and decentralised e-Government services initiatives DiMaggio et al., (2001).

The diagnosis itself can be a starting point for building consensus among those charged with implementing e-Government services Lenihan, (2002). A statement of the problem agreed upon by officials and others can be an excellent basis for further cooperation. e-Government services leaders must determine how public to make the results of the diagnosis if, for example, they might be discouraging to civil servants Hachigian, (2002).

The corporate culture and its diversity within government is an important aspect of e-readiness Sweisi and Adams, (2006). Culture is the unifying thread that brings people across the government organisation to share the same vision, mission, values, beliefs, and expectations Ojo et al., (2006). Culture is one of the most important factors that gives an organisation its special identity, stability, increases employees commitment, distinguishes the organisation from others, provides guidelines and reference for behavioural conduct, and helps the organisation to achieve its goals and objectives. It can make or break the government Abdulmohsen, (2005). An e-Government service requires some changes and adaptation to a new culture; government has to know from where to start. However, government cannot throw away the old culture to start a completely new culture based on e-Government services. As the old saying goes, "Don't throw the baby out with the bathwater" Foley, (2000).

In pursuing cultural change, a government is confronted with cultural diversity. Any government consists of different organisations and layers, where each organisation has its own culture Lucas Jr and Baroudi, (1994). The main challenge for e-Government services is to foster its cultural diversity Helen et al., (2007). This requires government to achieve cultural intensity (the degree to which the whole people of government belief in the new values, expectations, and guidelines) and cultural integration (the degree to which the whole government shares the same culture) Sweisi and Adams, (2006). To foster culture diversity and move the whole government to share a common cultural framework Selden and Selden, (2001) (business-oriented) that extends across and around the whole government, the following steps should be undertaken:

1. Study, analyse, and understand the different cultures of government organisations and identifying the critical values that were the driving success for each organisation Rhodes, (1996). You can't introduce a new culture before government officials and employees understand from where they are starting Sweisi and Adams, (2006).
2. Identify the new desired cultural pattern for the whole government and highlight the advantages of the new change for the whole organisation Scott et al., (2003). Try to identify employees and teams who have ideas for a better culture and are willing to implement it to support the new required pattern Association of London, (2001).

3. Estimate the gap between the existing and the new required cultures and identify the reasons why the gap exists Bhatnagar, (2004). It is highly desirable to find and identify the most effective sub-culture in the whole government that can be used as a good example from which employees can learn (centre of excellence) Scott et al., (2003).
4. Develop a tactical programme to fill the gap. This requires the top government officials to set the vision that will be the guiding principle for change and share it with the whole organisation Bhatnagar, (2004), communicate and share the new required values, beliefs, expectations, and guidelines, and demonstrate the new required behaviour Lau, (2005).
5. Implement the tactical programme. During the implementation, government has to provide the necessary support, resources, training, understanding of resistance to cultural change; it important to maintain continuity with the old cultures Nixon and Koutrakou, (2006).
6. Government has to maintain the momentum by continuously getting feedback and cultivating innovative leadership to continue leading the project to achieve its goals and objectives Weerakkody and Dwivedi, (ND).
7. Drive the whole government to live the new culture because actions speak louder than words Corbitt and Al-Qirim, (2004).

Government's structures are usually characterised by high bureaucracy and hierarchical. In most government organisations, the Director Generals' work as coordinators between the central government and their organisation instead of enabling them to empower their employees Halligan and Moore, (2004). E-Government services requires the transformation from a complicated structure with a chain of command and instructions to a flat flexible Chadwick, (2003), empowered, networked, knowledge-based, and creative structure to be more sensitive to citizens and business needs and adaptive to the external environment Loebbecke and Wareham, (2003). Instead of this complicated structure, government has to generate synergy, create seamless government management, and integrate all organisations utilising all available resources across government Ahmed et al., (2001).

With human capital becoming more expensive, training, developing, and empowering employees is a major area for increased productivity Association of London, (2001). Employee involvement in decision-making, improving their work environment, and sharing information with them will give them better control to do the work much better. The new structure should empower people across government and transfer them from conformity to creativity Bhatnagar, (2004).

One way to begin e-Government services modernisation is simply to make current procedures transparent to the public Jones et al., (2004). Even this, however, can be quite difficult. But documenting professional quality standards and operational procedures can be invaluable to support existing e-Government services projects, assist in training, and identify other areas for e-Government services reform Strejcek and Theil, (2003). In order to prepare, governments can create a manual describing all existing human procedures and processes, including all governing laws and regulations Davenport and James, (1990). The manual will help with preparations for the new system and identify other "quick win" reforms and will serve as a useful training tool to help officials understand changes from the old to the new system Basu, (2004).

Like any government reform effort, political will is required to lead the change and implement an e-Government services project Forbes, (2008). Without active political leadership, the financial resources, human effort, inter-government coordination, and policy changes required to plan and implement e-Government services will not be sustained. Political will exists when senior decision-makers have the power to exercise leadership in the face of opposition and setbacks Magee, (1998).

Finding where e-leaders are emerging is crucial. Nothing is more critical to the success of e-Government services than political will. Behind every successful e-Government services project is a visionary leader or leaders who push for change even through difficult moments. The right leader has authority, is willing to take risks, is willing to secure funds for the programme, will commit time on an ongoing basis, and will publicly endorse and advocate for e-Government services McDaniel, (2005).

Wherever change is involved, opposition, resistance, and setback are to be expected. E-Government services programmes face many challenges Al-Sebie, (2005). Like any ICTs

undertaking, there will be delays and mistakes Asoh et al., (2002). Technology will change in the middle of the project. Complex government programmes require complex software, which will have bugs. Inside government, the bureaucracy will resist changes in procedures and possibly the increased transparency that e-Government services provides Loebbecke and Wareham, (2003).

In the face of such problems, sustained progress in e-Government services will be achieved only if the leadership believes that the benefits outweigh the costs and risks Forbes, (2008). Therefore, e-leaders must champion the cause of e-Government services and make the effort to build political support across government Ndou, (2004). This also means protecting administrative e-Government services positions against political patronage; in other words, governments should not treat e-Government services positions as rewards for political supporters Palanisamy, (2004).

The task is to motivate political leaders to "sell" the concept of an e-Government services project to potential leaders in a politically appealing way Forbes, (2008). The benefits of the programme to the voting public and other stakeholders need to be obvious to them. After gaining their support, it may be useful to educate leaders to be "e-literate" so they have some basic understanding of the power and potential of technology Harrison and St. John, (1996). Political will is dynamic. A successful e-Government services project can create good will among citizens that increases demand for e-Government services and thus generates further political will among political leaders. Leadership can also be found outside government among businesses, for example McDaniel, (2005). Business leaders can help build momentum for e-Government services reform and encourage the emergence of e-Government services leaders. Other ways to motivate leaders are to push ahead with a more modest e-Government services initiative and then present political leaders with a complete, successful project that they can publicly take credit for Magee, (1998). This approach can only work if success of the project is almost guaranteed and a sufficient budget is assured. Leadership should be sustained. If leaders are asked to take ownership of a project, by appearing publicly to announce or explain the project, their interest is likely to remain high. Sustained interest is important to keep the momentum of a project moving forward. Making a few speeches or issuing a few executive orders will not suffice Hachigian, (2002). However, even the most enthusiastic politician will rotate in and out of government. Support from the

citizens, business and from the legislative arm of government can help sustain interest and commitment to e-Government services even when there is a change in political leadership Heeks and Stanforth, (April 2007).

If a country cannot find or create political will, it must persevere and keep trying. In some places, a motivated, visionary leader may wait years to finally reach political office and launch a major governance reform programme that includes e-Government services Bhatnagar, (ND). In addition, an e-leader must plan for e-Government services projects to continue and grow beyond the end of their leadership period and among other political parties Accenture, (2003).

E-Government services budgets must include funds to promote and publicise projects through various media channels Khan and Hildreth, (2004) (e.g., radio, posters, public meetings, newspapers). Without promotion, the target audience may not learn about the project or use it. And without a large number of people benefiting from the project, the benefits will not be sufficient to justify the costs Jones et al., (2004). This, in turn, can undermine political will. In contrast, a strong promotion effort can generate public excitement, which can increase political will.

3.4.2 Providing a Roadmap and Setting Direction

With such a dramatic change, government can't continue to proceed with the same vision, goals, objectives and priorities Jones et al., (2004). Government has to adjust its vision, goals, objectives, priorities and strategies. Otherwise, you will be leading the whole government to death Association of London, (2001). Re-defining the governments' vision, goals, objectives, priorities, and strategies will provide government with the roadmap to move in the required direction Gupta et al., (1997).

The first step in developing an e-Government services strategy is to establish a clear shared vision for e-Government services Bhatnagar, (2004). The purpose of government should be to further the shared goals of a society Nixon and Koutrakou, (2006). Therefore, the transformation process should start by establishing a broad vision of e-Government services that is shared by all stakeholders, including citizens, businesses, officials, civil society groups, and others Weerakkody and Dwivedi, (ND). The broad vision should flow

from the large concerns of a society. If the public and private sectors are consulted only after e-Government services plans have been developed and implementation has begun, e-Government services programmes risk being underused or even irrelevant Jones et al., (2004). A shared vision ensures achieving the full potential of e-Government services. A shared e-Government services vision provides support of all stakeholders from beginning to end and will result in a shared stake in the outcome Gupta et al., (1997).

Involving key stakeholders – citizen groups, associations, businesses, government officials, none government organisations, unions, and other civil society groups – does not mean that all decisions on e-Government services must await broad public or across-government consensus. E-Government services require a champion and political leadership. However, defining the vision and selecting priority areas need input from stakeholders, and not only a few elite experts or officials Harrison and St. John, (1996). In many countries, including developed and in particularly developing countries such as Libya; citizens distrust their governments, especially where there has been a history of distrust, political instability, or large-scale corruption and social capital. To ensure that the public and stakeholders will be partners in the e-Government services effort, it is important to try to build trust in government. Lack of trust by the public can lead to the failure of or serious delay in e-Government services initiatives Heeks and Stanforth, (April 2007).

The mechanisms for receiving input from various stakeholders will vary, but making an effort to include non-government stakeholders in building the vision for e-Government services will pay off United Nations, (2005). Governments must give serious consideration about who should help define the e-Government services vision and how to secure their input Mitrakas, (2007). In some places, governments can organise public meetings or conduct polls of citizens (and businesses or officials). In others, citizens and the private sector are included in committees that develop an e-Government services plan in an open and collaborative way Jones et al., (2004).

Vision should be citizen-centred. Ultimately, e-Government services must be about meeting the needs of citizens and improving their quality of life Golden et al., (2003). Borrowing a lesson from the private sector, e-Government services must be customer-driven and service-oriented Ndou, (2004). This means that a vision of e-Government services

implies providing greater access to information as well as better, more equal services and procedures for the public and businesses Corbitt and Al-Qirim, (2004). Even when e-Government services projects seek to improve internal government processes, the end goal should be making government serve citizens better. This means recognising the diverse roles that citizens have as parents, taxpayers, constituents, employers, employees, students, investor, and lobbyists Gurm, (2004).

Saving money should not be the broad vision that motivates e-Government services Khan and Hildreth, (2004). E-Government services should not solely be a strategy for reducing the cost of government, although this can be one valuable outcome. Saving money can be an easy way to sell e-Government services to political leaders and the public Jones et al., (2004). However, with few exceptions, e-Government services applications do not lower costs in the short-term for government itself, though they may reduce costs for citizens and business Elmore, (1997).

Once the vision for e-Government services is established, it is crucial that leaders from government and non-government sectors communicate the vision across the government and to the public Association of London, (2001). Leaders must establish a communications strategy to ensure that people understand their vision, the changes that will occur, and the tangible benefits for them from e-Government services Baker, (1972). To communicate the e-Government services vision to the broadest possible audience, it is best to use the media most likely to reach target audiences Sarikas and Weerakkody, (2007). For the public and businesses, this might mean town meetings, newspapers, TV or radio broadcasts, and/or web sites. For civil servants, discussing the vision in speeches, department meetings, or trainings might be effective Socitm, (2000). The communication strategy will depend upon the circumstances of each society and the nature of the e-Government services initiative.

An example of a shared e-Government services vision might be to create an information society to see citizens, businesses, schools, public administration and service industries all become information-based Loebbecke and Wareham, (2003). ICTs are to become part of the daily work and lives of our people. For other countries, the e-Government services vision may focus on redefining the relationship between government and citizens Monteiro et al., (2003). This means making procedures related to government services

transparent, empowering people, and eliminating traditional ways in which officials deal with citizens', e-Government services goals should flow from the broad vision. There are too many possible reasons and goals for e-Government services Altman et al., (1991). However, there are broad categories of goals that are commonly pursued by societies that include but are not limited to the following:

1. Improving services to citizens Basu, (2004);
2. Improving the productivity (and efficiency) of government agencies Bhatnagar, (2004);
3. Strengthening the legal system and law enforcement Carter and Belanger, (2005);
4. Promoting priority economic sectors Jones et al., (2004);
5. Improving the quality of life for disadvantaged communities Ciborra and Navarra, (2005);
6. Strengthening good governance and broadening public participation Conroy and Evans-Cowley, (2004);
7. Within each category, different objectives might emerge Loebbecke and Wareham, (2003).

Each society's vision and goals should also be accompanied by a short list of priority areas for the e-Government services programmes Bhatnagar, (2004). In other words, the broad e-Government services vision flows from a society's main concerns and the target areas flow from the e-Government services vision. How the broad vision and priority areas for e-Government services are defined will depend upon the specific conditions and ambitions of a society. The priority areas may include specific sectors (i.e., education, health, social, etc.) and may include but are not limited to the following:

1. Creating a more accountable government by increasing transparency in the judicial sector and fighting corruption Böhlen, (2005);
2. Integrating government into the business hub by facilitating commerce and services for businesses online, as well as improving the investment regime and tax system Sarikas and Weerakkody, (2007);
3. Helping older people live independent lives and supporting children and their families Weerakkody and Dwivedi, (ND);
4. Helping the hardest to reach into work Sarikas and Weerakkody, (2007);

5. Delivering higher quality, more reliable services Ray and Mukherjee, (2007).

The goals, priorities, and target group of e-Government project(s) should be consistent with the overall e-Government services vision Jones et al., (2004). Once this requirement is fulfilled, there are a number of additional strategies for choosing a first project. One option is to pick a project that is directly in line with pressing issues of a particular society Grant, (2005).

In Chile, the availability of affordable housing is a critical public concern. One e-Government services project enables poor people to apply online for housing vouchers and subsidies, thereby avoiding the time, cost, and red tape of applying in person at Housing Ministry offices, which are located only in major cities Pacific Council, (2002).

Another option is to make the first project one that directly benefits a large number of citizens, like one that improves the process for administering a government benefit Pacific Council, (2002). Yet another option is to start with a project that affects all government units, like procurement or a government intranet, so all government workers have a stake in the e-Government services process Asgarkhani, (2005).

The goals and target group(s) must match the available technology and reflect the earlier diagnosis. The technology chosen must be able to deliver the intended services or information and reach intended audiences for a given e-Government services project Bose, (2004). For example, it is useless to create a web site for important health information for rural communities if those communities have no affordable or regular access to the Internet Nunes et al., (2002).

3.4.3 Partnership with the Private Sector

E-Government services are not something government can do alone. The private sector, in particular, has a key role to play, from the vision, planning process through implementation, monitoring and evaluation Sherwood, (1990). Companies are not merely a source of taxes, ICTs services, or jobs Moen, (1994). In both developing and industrialised countries, e-Government services require expertise, resources and input from the private sector. Companies can offer valuable lessons in customer service, responsiveness and

adaptability to customer needs Balutis, (2001). The government should not view the private sector as merely a place for outsourcing. Rather, it should make the private sector a genuine partner in e-Government services. Private sector partnerships are especially promising when there is a possibility of creating revenue streams from e-Government services or where e-Government services projects can be replicated for other agencies or governments Fang, (2002). However, such partnerships will often require creating a new perspective among officials, particularly in emerging economies. Mistrust between government and business must be replaced with strong working relationships Rubino-Hallman, (ND) and Sweisi and Adams, (2006).

Governments must find companies experienced not only in technology applications but also ICTs project management so e-Government services applications can be developed more quickly within government budget cycles Gueorguiev et al., (2004). Governments should learn from the e-commerce experiences of companies, how to market services and attract/retain customers (e.g., using systems for "customer relationship management") Wimmer and Traunmuller, (2004) In countries where the ICT sector is weak, governments can be models for good ICTs usage Gilbert et al., (2004). If government is an effective user of ICTs , this may help local ICTs companies to improve their capacities Asgarkhani, (2005). For example, large ICT contracts and projects might include capacity-building partnerships between local and multinational companies. Early planning to make sure local ICT companies participate in the e-Government services planning process can be critical Becker et al., (2003).

The stakeholders in e-Government services must attempt to understand everyone's needs Harrison and St. John, (1996). Government and business need to understand each other – especially each other's need for "return on investment," (ROI) Zheng et al., (2002). For companies, this primarily means revenues. For government, this means efficient, reliable, robust services (and perhaps a share of revenues), and increased legitimacy and trust from citizens Asoh et al., (2002). For officials, this means receiving support and training, as well as professional opportunities and rewards for successful adoption of new procedures, work practices, and responsibilities Aucoin, (1990). This is important to minimise "brain drain" from officials leaving government to the private sector.

As highlighted in the previous section, e-Government services plans must include significant training for officials Banerjee and Chau, (2004). As they gain valuable, new skills, such officials are often in high demand for private sector jobs, especially in Libya where the pool of highly skilled workers may be very limited. The loss of trained personnel can be damaging to e-Government services projects Bose, (2004). To minimise staff turnover, it is important to develop innovative compensation packages and professional perks. Contracts with private sector partners might include clauses designed to prevent contractors from hiring project staff away from government Chadwick and May, (2003). Similarly, employment contracts might prevent staff from leaving jobs over a given period after receiving training or extra education.

Companies need to sell e-Government services projects to their management, and government needs to sell those projects to the public and its officials Jones et al., (2004). The partnership can be stronger if there are people in the government who understand how companies work and people in the private sector who understand the needs of government Stowers, (2001). A solid, well-designed business plan will help.

Both government and businesses (G2B) need to contribute actively to the partnership, and each should do what they do best Griffin et al., (2007). Companies can be a source of cost-sharing, technology, and project management expertise. Government needs to promote the use of e-Government services among the public and officials as well as create a legal framework, create incentives to help local companies grow and become viable partners in e-Government services, and commit to improving ICT manpower Chissick and Harrington, (2004). Business cannot replace government leadership. Outsourcing can help relieve the government of limitations in its ICT manpower. However, the private sector cannot substitute for government in all cases; government must retain responsibility for policymaking, certain basic public services, and decisions about access and pricing Feltz et al., (2004). The private sector can be a key distribution channel or delivery system for services. It should not, however, define the vision or dictate the policies for e-Government services.

For many governments, outsourcing services to private companies is a new approach Sherwood, (1990). To avoid wasting time and money, government must establish clear parameters for working with the private sector. For example, a policy should mandate that vendors be carefully evaluated before they are granted contracts Robert and Davied, (2001).

It should make clear that the company is responsible for delivering a certain level of functionality and services, no matter what the technology. Government must shift the burden to the experts to decide what technology to use. This will lower the risk of buying obsolete or incompatible technology for the government Brown, (2001). Last, government must identify best existing practices in dealing with the private sector. Outsourcing requires government to use new types of contracts with clear benchmarks for performance that will not only ensure that hardware is installed but more importantly measure the performance of vendors and the quality of services received Centeno, (2003), especially in Libya. Government workers will need to be trained on how to negotiate and draft such contracts.

When projects are outsourced to private companies, government should designate officials who will work as counterparts with the companies on an ongoing basis Bhatnagar, (2004). To implement and manage e-Government services projects effectively, the private sector needs counterparts. This does not mean that government officials should direct projects. Rather, they should work with the companies to facilitate government cooperation Association of London, (2001). A key role of government is to develop sound ICT policies – for example, rules for concessions, outsourcing, and subsidies.

In countries where the private sector, especially the hi-tech sector, may not be well-developed, this question raises significant issues Lamersdorf et al., (2004). How can government access needed ICT expertise and resources while at the same time encourage the growth of a domestic ICT industry? Bannister and Remenyi, (2003). In the short term, the most viable (and perhaps desired) e-Government services partners may be multinational companies that have proven experience and capacities to deliver. However, the long-term development of local ICT companies can, and often should, be part of e-Government services planning Bose, (2004). One effective strategy might be to pair an experienced multinational company with a suitable local company in the development and delivery of e-Government services applications Chen and Gant, (2001). This can promote the transfer of technology and skills to local industry while at the same time ensuring that outsourcing produces results and sustainability.

Even if private companies contract to develop and manage e-Government services applications, the government must ensure that such companies do not use the data that they manage, especially personal information collected from citizens, businesses and other

customers Conroy and Evans-Cowley, (2004). This is crucial in order to protect the privacy of individual customers and build public confidence in e-Government services as a reliable, safe way to access services and information.

3.4.4 Plan the Change to e-Government Services

Effective management is vital for the success of e-Government services, as it is for all government or business operations Anthopouls, (2005). Being able to deliver a project on time and within budget, coordinate effectively among government agencies (G2G), and oversee private sector partners all depends on capable management. Before moving forward with an e-Government services project, setup management teams and mechanisms at both the national/state level and the project level Becker et al., (2003).

The common advice followed by the private sector in e-business – "think big, start small, scale fast" – is equally useful for e-Government services. Develop a long term ambitious set of ideas for e-Government services (whether revealed to the public or not), but begin with a project that can be accomplished. Pacific Council, (2002) it is risky to start with a series of large, national, and cross-agency projects. The e-Government services plan should be diverse but realistic, and training must be a part of it Heeks, (2006a).

E-Government services initiatives typically involve large commitments of resources, planning, and personnel. They are very difficult to manage without defined teams to supervise the e-Government services process from start to finish Bhatnagar, (2004). For example, e-Government services activities within a department should be institutionalised to ensure long-term stability and support of the new model Madon, (2007). Such teams must be provided enough budget, human resources, and administrative support to carry out their duties. Without authority from political leaders, the officials responsible for e-Government services implementation cannot ensure plans are carried out. Formal legal authority to oversee e-Government services implementation is also needed Sihlezana, (2006). Government should consider creating a central e-Government services agency within a ministry or as an independent body, as well as creating teams responsible for project success at both the political level and project management level Haitjema, (ND).

For cross-agency projects, management teams need authoritative representation from each agency necessary for a project's implementation. This will keep open lines of

communication and reporting, enable information sharing, and facilitate the establishment of common technology infrastructure, as well as common policies Wagner et al., (2003), standards, and security systems across departmental and agency boundaries.

Vision, goals, objectives and priorities may not be enough. A detailed work plan could help steer the agencies and officials responsible for implementing e-Government services. The work plan provides the roadmap and guidelines for implementing e-Government services Heeks, (2006a). The work plan should focus on at least six key elements:

1. Content Development: including development of applications, open standards, local language interfaces, user guides, and e-learning materials Tan and Pan, (2003);
2. Competency Building: human resources and training programmes must be implemented at all levels Heeks, (2002a);
3. Connectivity: local networks and Internet connections must be applied across the relevant agencies or enterprises Heeks, (2006a);
4. Cyber Laws: to provide a legal framework that supports the objectives of e-Government services policies and projects Schware and Deane, (ND);
5. Citizen Interfaces: a proper mix of delivery channels is needed to ensure that e-Government services is accessible and affordable for users Centeno et al., (2004) and Germanakos et al., (2005);
6. Capital: e-Government services business plans must identify revenue streams like user charges, subscriptions Johnson, (2003), or budgets that will help achieve financial equilibrium.

The role of stakeholders in e-Government services does not end once a national vision has been set Jones et al., (2004). They comprise a valuable resource for e-Government services. It is important to set up a mechanism to ensure the continuous involvement of key stakeholders to get feedback from users, particularly about which elements are succeeding and which ones should be re-thought or re-designed Manktelow, (2006).

Governments might consider establishing an advisory board for each e-Government services project comprised of users and other key non-government stakeholders critical for

the implementation of the project. Advisory groups could include private sector partners, non-government experts, former officials or civil society groups Scholl, (2001).

E-Government services management is more than implementing projects Sweisi and Adams, (2006). It means planning for capacity building to ensure the technical sustainability and continuity of e-Government services projects. Training employees at all levels of the bureaucracy, including senior officials, should be an integral part of the work plan. Often the target audience will need some simple training, as well, to utilise any new e-Government services system Heeks, (2003). This training should also be part of the management design.

Libya should not attempt to re-invent the wheel Heeks, (2002d). Rather, they should borrow ideas from other regions or countries that have successfully implemented similar projects. Governmental officials should visit foreign governments and talk with the officials in charge. This is a relatively low-cost way of learning Victor et al., (1998). Of course, advice from elsewhere will need to be adapted to fit local needs. Picking the right e-Government services projects, especially the very first ones, is critical Heeks, (2003). A successful initial project can become the selling point for all future efforts and create the political momentum needed to move e-Government services ahead. A small success story can become a powerful example that others can imitate Gupta and Jana, (2003). Like all reforms, it is important to show success early and not spend too much time on developing visions, strategies and work plans. Identify a few high-profile problems and address them with pilot e-Government services solutions quickly (for example, within a year or less) that will address both the back office operations of government and access/interface with the public (G2P) Funabashi and Grzech, (2005).

3.4.5 Dealing with Resistance to Change

The level of resistance to change and level of involvement by officials in setting policies and practices will greatly impact how fast or smooth the implementation of e-Government services will be Gilbert et al., (2004). Civil servants may resist e-Government services projects, and may refuse to adopt new procedures. This problem may be more severe in Libya where human resources may be less robust, the economy less stable Ndou, (2004), and other job opportunities less plentiful.

3.4.5.1 Understand

The first step for government in addressing this issue is to understand why officials resist Yigitcanlar and Brisbane, (2003). There may be a variety of reasons including:

1. Fear that the technology will make them obsolete, or that they will lose their jobs Dugdale et al., (2005);
2. Fear that they will lose power and "turf" that they have created in the current system Rubino-Hallman, (ND);
3. Unfamiliarity with technology and fear that they will look stupid in front of others if they do not use it correctly – some call this phenomenon "technical shock" Ndou, (2004) and Sweisi and Adams, (2006).
4. Fear that technology will mean more work for them such as, for example, having to answer constituent e-mails Sheffer, (2003);
5. Belief that they have nothing to gain professionally from adapting to new technology, and nothing to lose if they refuse Banerjee and Chau, (2004);
6. Concern that new, automated processes will mean fewer opportunities to receive unofficial payments or bribes in return for using their discretion to help certain parties Banerjee and Chau, (2004).

E-Government services leaders must identify the most likely sources of resistance and devise a plan to overcome them Greenberg, (ND). Numerous strategies can be effective, depending on the specific circumstances. Government should build on existing capacity, enthusiasm, and excellence within the government. An initial diagnosis may reveal certain government units that are more advanced, forward-thinking, or capable than others Dimitrova and Chen, (2006). Government should start with the best agencies and services – their strongest links – and base the initial e-Government services programmes and pilot projects on existing centres of excellence Baker, (1972). Sometimes the choice will not be where to begin with e-Government services, but which existing project to push.

A few pilot projects can provide experiences that show more clearly the potential and challenges of e-Government services Ciborra and Navarra, (2005). They can be documented and used to strengthen the vision and planning processes, even if the pilot systems are replaced later with new, better systems Drüke, (2005). Pilot projects not only solve immediate problems but can also lead to a more systemic e-Government services effort.

A successful e-Government services initiative must involve civil servants, especially those in higher levels of management Landry, (2003), in the early stages of the e-Government services planning process. The best way to achieve "buy-in" is to use the suggestions of officials to improve the content or design of an e-Government services project Mingers, (2003). e-Government services implementers should ensure that officials understand how the e-Government services project will actually affect their work and that of their subordinates so they can help manage workers' expectations Wheelen and Hunger, (1986). Ultimately, while inclusion is important, leaders must be careful that planning does not delay the process to the point where momentum for the project dissipates. Government should explain to its employees the goals of the transformation, and be clear that they are not the enemy or the targets of reform Gaddis, (2002). Government should explain to officials what their new jobs will be. It is vital to manage expectations and respond appropriately to shifting perceptions at all stages while the e-Government services project unfolds Tan and Pan, (2003).

Some governments have found that, by first training the leaders of units, they created acceptance of the new system that then trickled down through the bureaucracy Grant and Chau, (2006). If lower-level workers are to be retained, they must also receive adequate training in advance of the new system's introduction. If they understand the new methods, they are less likely to resist them. It is important to not approach training narrowly, only preparing officials for specific e-Government services applications Davison et al., (2005). Capacity-building needs to enable officials to handle information, adapt to changes in responsibilities, and develop new competencies. Government should seek to train officials to become a new kind of knowledge-based employee Devadoss et al., (2003). Knowledge management, as it is called, is a key element of e-Government services and should be part of any e-Government services project. Government should hire an outside company – for example, an experienced consulting firm or technology company – to rigorously and regularly evaluate progress on e-Government services projects Gupta and Jana, (2003), paying particular attention to the relationship between project outputs and objectives. Performance-based management should be promoted. While offering training opportunities, government should ensure that workers do not to switch to the old system Hughes et al., (ND) As a way to keep workers involved and engaged, as well as to aid in the management of the e-Government services project Følstad et al., (2004), government should feedback to

employees about how the system is working, any problems they have encountered, and adjustments that might improve effectiveness Tat-Kei Ho, (2002).

Government should reward those who excel in the new environment. Officials should establish benchmarks and tangible progress indicators for individuals, and then create incentives based on their performance Heeks, (2003). These might be related to professional advancement or even financial rewards. Government should try to allow the units that are doing the work to be credited with any cost savings and to use that money to invest in further reforms Sharma, (2007). Government should publicly, even formally, praise those who adapt to the system well. Officials should announce "best employee" awards based on secret evaluations, even without the direct supervisors of the employees knowing they have been selected. The best way to recognise staff will vary in different cultures, but praise is important McDaniel, (2005).

3.4.6 Improve Citizens' Participation

All countries, even the most advanced, are still learning how to encourage, organise, and manage public participation Bose, (2004). Public participation is an important element in many stages of the e-Government services process, from defining a society's vision and priorities for e-Government services to determining e-readiness and managing e-Government services projects. e-Government services requires participation, not automation Fang, (2002).

The public, which includes the private sector, civil society groups, and individuals, can participate in e-Government services affairs in many different ways by: commenting on e-Government services plans themselves; retrieving information Steinmann et al., (2005) (e.g., accessing information from government websites) or offering information (e.g., through public surveys, focus groups or emails); or participating in dialogues – both public dialogues with the government and citizen-to-citizen (C2C) dialogues hosted by the government Sharma, (2004).

Government should include all types of public participation in e-Government services plans. Offer different types of participation to ensure that different voices are heard Elliman et al., (2007). Offer the public opportunities to participate in ways that matter to them. Citizens who choose to participate in public affairs must receive some "return on

involvement" Elliman and Taylor, (ND). If they give their time and effort, they will want something in return. They will need to know that their input is taken into account – for example, by acknowledging input that is used, or even publicly rewarding especially useful recommendations or assistance Elsheikh et al., (2008). Citizens, the ultimate e-Government services customers, are the experts in evaluating what they want and need Alexander, (ND). Thus, another strategy is to survey citizens or businesses to identify their most pressing needs and how best to address them. E-Government services should deliver something relevant and useful. However, sometimes government must anticipate the needs of its citizens. For example, sometimes citizens will demand a service or an opportunity only after the government begins providing it Yigitcanlar and Brisbane, (2003).

If the target audience for an e-Government service has no access to the technology needed to obtain the service, e-Government services plans must address how to provide that technology Lowery and Director, (2001). This may be a less immediate issue for e-Government services projects applied to back office support services, which often improve over-the-counter services for the public. However, matching the intended services and access to necessary technology and available resources is always a critical issue Ke and Wei, (2004). In the end, e-Government services are meant to serve citizens. Thus, it is critical, especially with projects designed to serve the public directly, to assess their needs and solicit their input. Just as important, all e-Government services should be piloted with the full participation of citizens before a government invests in or embarks on a full-scale, nationwide version of the project Layne and Lee, (2001). Without this pilot-and-citizen involvement scheme, any e-Government services project can be very risky. Without first consulting its citizens, one city in Europe implemented, at great cost, a sophisticated online procedure for registering children for school. No parents used the new system, however, because they registered their children when they went to visit the schools Apel et al., (ND).

Participation requires collaboration. Being willing to collaborate with the private sector and civil society groups who may possess much needed expertise and resources is an important element of readiness. Government must see itself as a facilitator and not simply a director of e-Government services projects. Government must lead the e-Government services effort, but replace command-and-control with click-and-collaborate. While e-Government services requires moving away from a government-centred viewpoint, this does

not mean that government must step aside entirely Backus, (2001). There are certain roles that government must play and cannot delegate or outsource. Participation should not be a burden. Technology can be a powerful facilitator, allowing inexpensive and speedy channels of communication. In countries where Internet penetration is low, government should use traditional methods of soliciting public opinion, such as group meetings, surveys, focus groups, and other means Tat-Kei Ho, (2002). Government must make sure that the public can give their input anonymously. This ensures that citizens evaluate government services and effectiveness openly. It is the only way that government will receive the information it needs to evaluate and improve its e-Government services programmes and services, even improve policymaking Cook, (2000). It should be noted, however, that while citizens are experts, they may not demand a service until someone provides it to them first.

When e-Government services enables the public to communicate with government, public participation often turns into a flood of communications, and often complaints. Managing public participation and processing government-to-public (G2P) contacts are big challenges for e-Government services Hazlett and Hill, (2003). Government needs to make sure that is has the resources, personnel, training, and clear policies necessary for handling public communications, queries, and complaints. Mismanagement of public participation risks alienating the public and creating greater dissatisfaction with government and the e-Government services programmes it seeks to build Devadoss et al., (2003). It may be helpful to strengthen “offline” systems for handling public complaints, employee grievances, and reports by “whistle-blowers” to improve public confidence, even before online communications are offered. Yet when e-Government services includes strong, responsive systems for customer-relationship management, e-Government services can be an extremely positive experience for citizens with benefits that far outweigh the risks for all stakeholders West, (2004).

3.4.7 Evaluating Performance and Communicating Progress

How will governments measure performance and communicate progress? How will governments know if they are failing? Because e-Government services usually involves significant money, human resources, information, and political commitment, accountability is critical Esteves and Joseph, (2008). In Libya and developed countries alike, whether democratic or not, the policymakers and agencies responsible for e-Government services are

answerable for money spent, policies, and public services delivered or not delivered once the rollout of e-Government services begins Evangelidis et al., (2002).

The alignment of human capital management with the core business strategy, coupled with more sophisticated measurements of performance, is an important feature of long-term planning Wright and Boswell, (2002). The main challenge for government is to have a customer focus, with satisfied employees who are prepared for change. Technology is necessitating a change in the skills needed to increase customer satisfaction. Technology should be used as a tool to improve job motivation and job satisfaction Boxall, (1998).

The test of an e-Government services project's success is how well the project meets its goals – for example, how well it delivers services, makes information accessible, or increases access to government. Judging both progress and performance means establishing metrics. Accountability requires measurable performance standards Morris, (2006). There seems to be a very strong relationship and correlation between employee and customer satisfaction. Rewarding people based on the right measures of performance is a good reason to perform work better Jones et al., (2004). Cash has been the dominating incentive programme in the hospitality industry. However, non-monetary recognition programmes should be put in place. The institutions responsible for managing an e-Government services project must define the standards by which performance will be measured. The use of the Balance Scorecard system could be very helpful and can bring together individual performance, group performance Earl, (2001), organisation performance, customers' satisfaction, and employee's satisfaction, which are all very important to understanding the potential of a country's people. The Balance Scorecard is also an open process, as the employee has the opportunity of reviewing his or her performance and taking necessary corrective measures accordingly Fleisher and Mahaffy, (1997). The parameters or standards to measure e-Government services performance can be divided into two groups Titah and Barki, (2006): standards that measure a government's adoption of e-Government services, and standards that measure the impact of e-Government services applications Teicher et al., (2002).

The following are standards for measuring government performance La Porta et al., (1999):

1. Volume of transactions handled electronically Courty et al., (1997);

2. Response time to inquiries Teicher et al., (2004)
3. Length of trouble-free operation of an e-Government service starting from its launch La Porta et al., (1999);
4. Number and/or percentage of public services provided electronically;
5. Number of new services delivered electronically Amos, (2004);
6. Percentage of territorial area covered by a service Association of London, (2001).

The following are standards for measuring the impact of e-Government services applications:

1. Number and/or percentage of constituents or localities of "customers" accessing information or services electronically Peters et al., (2004);
2. "*Increased convenience or efficiency in delivering information or services (e.g., reduction in number of days to deliver services) resulting in 24/7 availability*" Morris, (2006);
3. Length of time for procuring goods, service, info (from the government, business or citizen's perspective) Kaur, (ND)
4. Reduction in the cost for citizens Auerbach and Maibaum, (2002);
5. Reduction in the cost for government Wang et al., (2005).

This list illustrates only some of the quantifiable criteria that might be used to assess the overall performance of an e-Government services project. Other standards might be developed that fit with the specific project implemented Bannister, (2007). For example, an e-procurement project might be assessed based on the volume of transactions processed, reduction in the time for the procurement process, or reduction in the government's administrative costs of procurement Peters et al., (2004). In contrast, a project providing health information online might be evaluated based on percentage of territory that can access the information, increased use of health services in areas where information is accessible online, or increased public awareness (for example, as measured by surveys) Sweisi and Adams, (2006).

Benchmarks act as a reality check for managers and policy-makers. They offer a way to measure on a regular basis whether e-Government services projects are advancing, sustainable, and delivering what they promised Benchmark, (2007) and Heeks, (2006b). Milestones should be established to track progress. Such benchmarks might be based on:

1. Specific dates;
2. Comparisons with other countries/states;
3. Opinion polls;
4. Independent surveys (e.g., of customer satisfaction, participation, cost effectiveness) Jutla et al., (2002);
5. Measurements of private sector participation or delivery by vendors Eyob, (2004);
6. The degree of self-financing achieved by a project Zhang, (2002).

Again, these are only some examples of methodologies/standards that could be used as benchmarks. Benchmarks need to be specific and assessed consistently in order to measure progress accurately King et al., (2002).

Government should consider using benchmarks to keep a scorecard that compares readiness and performance among agencies within the government. This creates incentives for agencies to pursue e-Government services projects aggressively in their effort to win recognition. It should be noted Kusek and Rist, (2004), however, that such scorecards do not measure the success in delivering e-Government services unless they are designed to do so.

E-Government services performance can be shown by delivering key services within an e-Government services initiative. Communicating the progress to the public is also important Moon, (2002). Steps to achieve quick wins include:

1. Agreeing on achievable quick wins as part of the plan for an e-Government services project;
2. Setting clear, measurable benchmarks for those quick wins;
3. Choosing the quick wins that will be used for a publicity campaign;
4. Creating incentives for people to meet benchmarks;
5. Measuring performance against the benchmarks Team, (2000).

Once benchmarks are met consistently, communicating to the public about the improved performance or explaining why benchmarks are not met Goetzel et al., (2001).

In conclusion the above challenges, problems and obstacles may face the implementation of e-Government services in Libya. Government of Libya could minimise the effects of these challenges by using the suitable theories such as stakeholders and network theories which

will enable implementers to identify how and who should be involved to obtain the support of the project rather than blocking it Freeman, (1984) to ensure the smooth transformation to e-Government services. In addition the government should demonstrate its commitment to the e-government services to enhance the trust of all stakeholders both private and public. Equally it is important for the government to support massive technological and infrastructural provision for a smooth take off of the e-government services in Libya.

3.5 Theories Justifying the Transition to e-Government Services

Since the beginning of government, philosophers, researchers, and academics have detailed numerous theories that explain the nature of government. Of these countless theories, two are especially noteworthy for this study Baker, (1972). These are Stakeholder Theory (ST) and Network Theory (NT).

3.5.1 Stakeholder Theory (ST)

Freeman, (1984) defined stakeholder in an organisation as any group or individual who can affect or is affected by the achievement of the organisation's objective. Stakeholder, in business parlance, generally refers to stockholders and those individuals and groups whose interests are tied to the economic success of any particular company Mitchell et al., (1997). In terms of government, stakeholders comprise a group of individuals and organisations that have an interest in the success or failure of particular policy issues, or even in the government in general Phillips, (2003). ST considers the numerous actors who have legitimate and often competing interests, weighs the balance of that interest and the influence of the stakeholder, and attempts to consider various outcomes based on this mixture of interest among stakeholders Baker, (1972).

The objective of ST is to theorise government as an institution whose primary goal is to balance myriad interests and present an outcome that is a function of that balance Jensen, (2001). An efficient government effectively weighs and responds to the stakeholder interests, whether it is political, economic, ethnic, or religious in nature.

3. 5.2 Network Theory

The Network Theory (NT) considers government through the lens of networks, identifying the roles, influence, relationships, and connections between individuals, groups,

institutions, and other governmental bodies and stakeholders, theorising how relationships between each of these actors influences governmental outcomes Lin, (2001). NT conceptualises governmental actors and relationship as “nodes” and “ties Wasserman and Faust, (1994).” Nodes represent the individual agent, and ties represent the relationship between the agents. Ties between the actors can be unidirectional or bidirectional. A unidirectional relationship is typified by the relationship between a lobbyist and a government representative; the lobbyist has influence on the politician, and the relationship goes one way. In contrast, a representative’s relationship with his or her constituents is bidirectional; the constituents can influence the representative, but the representative can also sway the constituents. According to Baker, (1972) the greater number of connections that an individual agent has, the more influence that agent enjoys. The objective of NT is to understand how government actions are derived from the interrelationship among stakeholders with formal or informal power in the government Sweisi et al., (2007). Unravelling and analysing the rich tapestry of relationships in government is the basis of NT, which seeks to understand how and why individuals act the way they do and how they relate and respond to their network Jones et al., (1997).

3. 5. 3 Theories Linking Government and e-Government Services

The aforementioned governmental models consider influence, relationships, and decision-making in order to explain how and why decisions occur in governments. These theories all contain a certain internal logic that explained the success or failure of an organisation, and provide a model for successful government Mitchell et al., (1997). However, these models largely refer to the traditional notion of government. A new model of government that focuses specifically on e-Government services and its implementation must be devised. E-Government services has the ability to revolutionise the way government works, the manner by which citizens interact with their government, and the method by which governmental services are provided Basu, (2004). As a result, it is important to map out the design of a successfully-implemented e-Government services model, reducing e-Government services to its most important constituent parts Sweisi and Adams, (2006). The purpose of these challenges may lead to provide guidelines to Libya with respect to the Aim of this study.

3.6 Summary

As said earlier at the introductory part, this chapter attempts to review the existing literature on the challenges that may face the effective implementation of e-governments services particularly in Libya. It also attempts to find out appropriate strategies that can help deal with the challenges that may be identified using strategic management principles.

It was found out that implementing e-Government services in a developing country such as Libya may face long and short term challenges which in this study are referred to as primary and secondary challenges respectively. Reviewing the existing literature seems to suggest that the primary challenges may include: people awareness, trust, technological challenges, cultural and participation. In addition the review of literature, a number of secondary challenges were identified and explained above. In order for the researcher to come out with an approach to deal with the challenges management principles were also reviewed to form the strategic basis of the approach. Common emerging trends were identified and described which will be evaluated by the findings from the field studies.

In conclusion this chapter has been able to fulfil the objectives set at the introduction. The researcher is of the view that to deal with the peculiar challenges that may face the successful implementation of e-Government services in Libya it is equally important for the government to demonstrate commitment in addition to creating awareness. It may be appropriate for the government to empower institutions, agencies and organisations to continuously share relevant information on a need to know basis. The researcher again seems to agree that the educational system in Libya could be used to train people with the relevant skills and knowledge needed to use on e-Government services.

In sum the findings clearly supports the potential benefits of e-Government services identified in Chapter One. Again the researcher is of the view that effective implementation of e-Government services in Libya as has been the case in the developed countries like the U.K and U.S could accelerate the economic and political growth as well as development of Libya. The next chapters will deal with the research methodology and propose a theoretical model that could be used as the roadmap for the successful implementation of e-government services in Libya.

CHAPTER 4
RESEARCH METHODOLOGY

4.1 Introduction

This chapter outlines the philosophical approach and methods that underpin this research. As mentioned earlier in this study, choosing a research design along with collecting and analysing the data are essential concerns for any researcher Eisenhardt, (2002). This study centres on how to successfully implement e-Government services in Libya. As indicated in (Chapter, One), researching the successful implementation of e-Government services in Libya is a broad area which requires combination of research methodologies.

First, relevant literature was reviewed to determine the best methods of e-Government services implementation, examined examples of obstacles, challenges, lessons, and factors that may impact on the success of e-Government services project. Questions about effective implementation of e-Government services that emerged and gaps in knowledge that were identified from the literature review were used to re-formulate the research question for the thesis (Section 1.5.1). Furthermore, it allowed the researcher to consider the philosophical foundations for the investigation. Finally, the literature review provided key insight that will be evaluated by the primary data to the possibility of successful implementation of e-Government services in Libya.

The second stage of the research design, outlined in this chapter, comprises collecting primary data from various stakeholders. For example internet users and the key players in this case refer to head of departments, managers and internet provider who are in the field of e-Government services in Libya to derive opinions, ideas, comments and suggestions to help make successful e-Government services implementation in Libya possible. The survey used four different methods of data collection which are: online questionnaire, paper-based survey, interviews, and case studies.

4.2 Justification of Philosophical Approach

The research methodologies used in this study is based mainly on the positivist, interpretivist and critical philosophical approach. These approaches rely on standardised and suitable research methods which gives research credibility Glaser et al., (1968). The nature of

the variables and data involved in this research are critical to determine an appropriate research method, as well as the statistical test to use in a given inquiry. Using the positivist, interpretivist and critical philosophical approaches helped the researcher to collect and analyse the voluminous data involved in this research. Research methods are either based on a quantitative or/and qualitative research techniques Hammersley, (1996) and therefore the researcher made use of these philosophical approaches which have been identified to be suitable, practiced and reliable.

4.2.1 Epistemological Approaches

Epistemology attempts to reveal something about the nature of knowledge and it is fundamental basis of what we know Morgan, (2007). There is a range of philosophical questions to be considered when one deals with epistemology, which have generally fallen on lines of positivism and interpretivism Ezell and Crowther, (2007). Furthermore, there are a number of philosophical assumptions associated with Interpretivist research. For instance, some forms of interpretivist research implicitly assume that human action is meaningful and that we discover meaning rather than negotiates or constructs it. Again interpretivism can be perceived as an approach where the researcher does not impose a particular view of the world, rather attempts to discern the views of others. The goal of this research is to determine and evaluate the knowledge, opinions and awareness of Libyan people on e-Government services implementation which seems to make use of epistemological philosophical approach.

As can be seen, these terms can be fairly nebulous, and defining them falls outside the scope of the study. However, acknowledging these debates over methodology allows researchers to understand clearly, the nature, assumptions, and purpose of their studies.

4.2.2 Positivist Research

Positive research implicitly assumes that reality can be objectively defined and described, using measurable properties that can be assessed by independent observers. Positivist research attempts to articulate and test theories, in order to promote the predictive understanding of phenomena Creswell, (1998). The tools used by positivist researchers include experiments, surveys, questionnaires, case studies, and simulation Baskerville and Wood-Harper, (1996).

Research is positivist if it includes formal propositions, quantifiable measures of variables, the testing of hypotheses, and inferences about a phenomenon from a population sample Creswell, (1998). This particular study uses positivist philosophical approach because it employs surveys for example questionnaires, interviews and case studies to assess and develop the TM for understanding the successful implementation of e-Government services in Libya.

4.2.3 Interpretive Research

Interpretative research perfectly assumes that access to reality is a function of social constructions, which need to be analysed, decoded, and represented Creswell, (1998). A suitable example of interpretive research is a case study. This research applies interpretive research through case study of Libyan technological initiatives (See Chapter Five) The philosophical basis of interpretive research includes phenomenology and hermeneutics, which is the philosophy of human behaviour and society. The goal of an interpretive study is to understand particular phenomena by assessing the meanings that individuals assign to those phenomena (such as interviews, questionnaires, and session discussions, which were used in this research) Baskerville and Wood-Harper, (1996). Interpretive research also attempts to determine the context of information and how they influenced knowledge Creswell, (1998). To this end, “Stakeholder Theory” and “Network Theory” have been employed in this study. Interpretive research does not predefine dependent and independent variables for study, but allows the data derived to define itself, acknowledging the full complexity of human perspective.

4.2.4 Critical Research

Critical research assumes that social reality is historically constituted Creswell, (1998). Critical researchers would argue that despite the fact that individuals have agency with respect to their economic and social decisions, these choices are constrained by social, political, cultural, and economic forces Baskerville and Wood-Harper, (1996). As a result, critical research is generally perceived as an exercise of social analysis, focusing on the conflicts, debates, and fissures in societies, hoping to solve or at least explain these forces and how they constrain individuals. This has been applied in the literature review and also comparing and contrasting the results of the surveys to the literature review (Table 4).

4.2.5 Critique of Philosophical Approaches

Orlikowski and Baroudi, (1991), building on the work of Chua, (1986), suggested three categories of qualitative research, based on the underlying research epistemology: positivist, interpretive, and critical research. The three classifications that are relevant to this study are positivist, interpretive and critical research Mingers, (2003). Positivist refers to a research method based on measurement, statistical analysis, experiments, surveys, questionnaires, case studies, and simulation. Interpretivist refers to a research method that uses interviews, qualitative content analysis, ethnography, grounded theory, and participant observation. It should be noted, however, that Orlikowsi's three research epistemologies are philosophically distinct as ideal types, in the day-to-day practice of social research. However, these distinctions are not always so clear-cut.

There is considerable disagreement as to whether these research paradigms are necessarily opposed or can be accommodated within one study. This study draws upon research methods from the positivist, Interpretivist and critical research domains. It should be clear from the above discussion that the word "qualitative" is not a synonym for "interpretive" – qualitative research may or may not be interpretive, depending upon the underlying philosophical assumptions of the researcher. Qualitative research can be positivist, interpretive, or critical. It follows that the choice of a specific qualitative research method (such as the case study method) is independent from the underlying philosophical position adopted. For example, case study research can be positivist interpretive or critical, just as action research can be positivist interpretive or critical Boudreau et al., (2003). The specific research methods used for this study are discussed as follows.

4.3 Research Design

The research design is also divided into two parts which are the research design process and practical application of the research design. The research design processes include the theory part (literature review) as indicated in (Figure 2) and the practical application of the research design involved the primary data collection and analysis (Table 4).

4.3.1 Research Design Process

The research design process involves collection of secondary data such as textbooks, journal articles, conference papers, and government reports. It also involves detailed literature

review and analysis of these secondary data to gain detailed knowledge of the subject area, to identify gaps in knowledge, which go a long way to facilitate the selection and design of appropriate tools and methods for the study. Finally, insight and broader understanding was gained on the guiding principles towards successful implementation of e-Government services project in Libya.

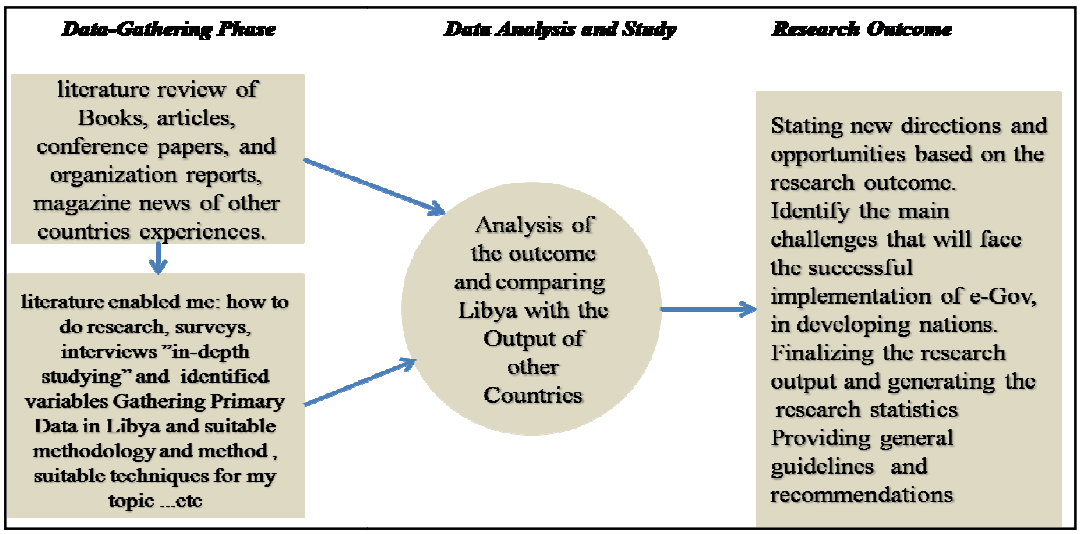

Figure 2: Diagram of the Research Design Process

4.3.2 Practical Application of Research Design

The practical application of the research design on the other hand involved surveys such as online-based and paper based questionnaires, interviews and case studies were conducted to measure the main challenges that may be face Libya and how to avoid the failure of e-Government services implementation in Libya (Section 6.4). Identifying these factors allowed the researcher to create new plan for e-Government services transformation. It also allowed the researcher to design appropriate questions for further primary research to fill the gaps in knowledge.

A survey was used to study the opinions, attitudes, and beliefs of the sampled group. This allows researcher to study and describe large populations fairly quickly at a relatively low cost. Survey methodology was previously used to help test hypotheses and challenges describe populations, develop measurement scales, and provide guidelines in research across a wide variety of research domains Wolf, (1986).

4.4 Proposed Theoretical Model (TM)

In this chapter the researcher tried to give a brief overview of the TM. After a thorough literature review and findings of the primary data on the research topic the researcher came up with the TM (Chapter Seven) as a model to what seems to be the 'best practice' in other countries. The TM could be used as a guide to deal with the particular problems of Libya.

4.5 Pilot Studies

Pilot studies were conducted to test the effectiveness of the data collection tools. The reason for testing the tools was to assess the validity and reliability of the questions in the survey. Haddock et al., (1998); and van Teijlingen and Hundley, (2001) stated that the minimum of ten should be enough for piloting a survey. Fifteen and ten Libyan oversees students took part in the online questionnaire and paper-based surveys respectively. The participants were contacted on emails and on mobile phones and the researcher received 90% response rate. With regards to the interview three line managers from the Libyan Ministry of Health took part in the pilot. It was identified from the pilot studies those seven minutes for minimum time and twenty-five minutes the maximum time, and the typical sixteen minutes. Based on the pilot studies some elements of the tools particularly the questionnaire were modified.

4.6 Validity and Reliability

There are two basic goals in questionnaire design: one is to obtain information relevant to the purposes of the survey; another is to collect this information within maximum reliability and validity Bulmer, Warwick, (1993; and Campion et al., (1993). Some researchers in the Information Systems (IS) field have pointed out that the scientific basis of IS research cannot be proved without the solid validation of the research Straub et al., (2004) and Boudreau et al., (2003). This research programme accepts this and follows the guidelines.

Validity is the degree to which a test measures what it is supposed to measure Ley et al., (2005). There seems to be three basic approaches to assess the validity of a test. They are content validity which measures the degree to the test items represent the domain or universe of the trait or property being measured; construct validity which concerns with the degree to the test measures the construct it was designed to measure; criterion-related validity which

concerns with detecting the presence or absence of one or more criteria considered to represent traits or constructs of interest Masone and Baramble, (1989). In this research, the content validity of the data collection tools was assessed by the 28 pilot respondents. After the pilot studies, the researcher had a talk with the participants about any unclear points in the tools. The questions were initially written in English and translated to Arabic because the respondents could not read English.

Reliability on the other hand refers to the tendency toward consistency of measurements Carmines and Zeller, (1979). Reliability is estimated in one of four ways Key, (1997): (i) internal consistency which is based on the correlation among the variables comprising the test, such as Crnbach's alpha; (ii) Split-half reliability which also based on the correlation of three equivalent forms of the scale, such as the Spearman Brown coefficient; (iii) test-retest reliability which centres on the correlation between two (or more) administration of the same item, scale, or instrument for different times, locations, or populations, when the two administrations do not differ in order relevant variables, such as the Spearman-Brown coefficient; (iv) inter-ratter reliability which bases on the correlation of scores between/among two or more ratters who rate the same item, scale, or instrument, such as intra-class correlation.

This research used the internal consistency method which provides a unique estimate of reliability for the given test administration. The most popular internal consistency reliability estimate is given by Cronbach's alpha *("the reliability coefficient")*, which was popularised in 1951 by Cronbach based on work in the 1940s with Guttman and others, and it is the most common estimate of internal consistency of items in a scale Feldt et al., (1987) and (Key, 1997). Generally, a lenient cut-off of .60 is common in exploratory research; alpha should be least .70 or higher which is regarded as an "adequate" scale; many researchers require a cut-off at .80 for a "good scale" Key, (1997). In this study, the Cronbach's alpha value was (.826) for the SPSS output of the reliability test for the overall measurement. Therefore, the scales of two samples can be treated as reliable.

4.7 Summary

This chapter discussed the research design, justification of research philosophies used: epistemology approach, positivism, interpretivist and critical research. Further, the chapter

described the research methods, pilot studies and variables, data and statistical tests. However, to completely respond to all the aims of this research, Libyan stakeholders' opinions as well as further investigation of the case studies are needed with respect to the implementation of e-Government services.

CHAPTER 5
FINDINGS AND ANALYSIS OF DATA

5.1 Introduction

This Chapter is divided into four different sections. First section is introduction. Second covers findings and analysis of the online survey. Third section provides the results and analysis of the paper-based survey instrument and the fourth section presents the results and analysis of interviews conducted in this study. These may provide solutions to some of the challenges that may face the successful implementation of e-Government service in Libya.

To understand the successful implementation of e-Government services in Libya, it is necessary to know the opinions, attitudes, and beliefs of a sample group from Libya. The strategy is that, the survey and the literature review will identify answers to the research question: "What are the main factors that may contribute to successful implementation of e-Government services in Libya?" A previous study by several writers (as shown in Table 2) seems to fail to focus on the unique factors of Libya. Hence this study attempts to bridge that gap in knowledge. As explained in detail in the previous chapter, all the instruments used in gathering data were piloted and relevant changes were made to make the instruments 'user friendly'.

Table 4 Process of gathering data

Secondary and Primary Data Suggestions	Process of Gathering Data
Literature Review	Learn from failure and success lessons to find the right way to accelerate transformation of e-Government services in Libya. Gathering developed countries experience and the different between developed and Libyan experience, (problems and barriers). The aim is to introduce successful e-Government services guidelines for Libya by learning from the success and failures in developed countries (See Chapter Two and Three for more details)
Survey 1	Putting an online questionnaire on the Libyan e-Government services homepage and invited contributions from users of the website to measure Libyan participation perspective on e-Government services: problems, challenges, barrier, etc (see Chapter Five Section 5.3)

Survey 2	This paper-based survey will be conducted as a complementary investigation to the online survey and will cover similar questions. The purpose behind this survey is to obtain views from three different groups of Libyan (students, Engineers and farmers). These groups were selected based on these reasons: with students, it was assumed that they have high level internet, computer and e-Government services usage. It was assume that engineers have typical usage internet computer and other electronic facilities. The farmers were assumed to have never or very low usage of e-Government services facilities. The three groups identified above are from different social levels and may give different opinions (Section 5.4)
Interviews	Interviews will be conducted with senior managers' responsible (key players) for e-Government services activity in Libya to measure acceptance, adoption of e-Government services by the preference of citizens, business and decision makers and constitute a novel and necessary those indicating successful implementation of e-Government services project. Most of the organisations and set-ups involved in the research activity will be through personal contact and through Libyan government departments. (See Section 5.5)
Case Studies	Identifying a small selection of case studies for deep understanding of successful e-Government services project challenges (See Chapter Six)

In order to reduce the data and present findings in a clearer and more concise manner, the researcher decided to categorise and unitise the information under four main headings (gender, awareness of e-government services, level of education and internet/computer skills). In the first instance categorisation of the data facilitated the determination of which findings were eligible for analysis and secondly helped in the avoidance of unnecessary repetition-Miles and Huberman, (1994). The actual process of categorisation was by no means easy because as a characteristic of qualitative study there was a considerable amount of information to deal with.

5.2 Age Profile of Libyan Population

According to 2006 census population of Libya is around 5.3 million. More then 50% people are under 25 years of age and 70% are under 35. These figures are illustrated in Figure 1.2. Education is prevalent in Libya as it is provided free by government, which means nearly

50% population is studying. Some of the people in other age groups are taking higher education either in Tripoli or abroad. Whereas, only 4.24% population is retired. To be noted retirement age in Libya is 65.

Table 5 shows the age profile of Libyan population

Age	Males	Females	Total	%
0-18	1131596	1087263	2218859	41.89
19-25	580231	283624	573287	10.82
26-35	535976	523310	1059286	19.99
36-45	336200	336449	672649	12.7
46-55	165330	166431	321419	6.26
56-65	112734	104670	217404	4.11
66 +	116014	108892	224906	4.24
Total	2687513	2610639	5298152	100%

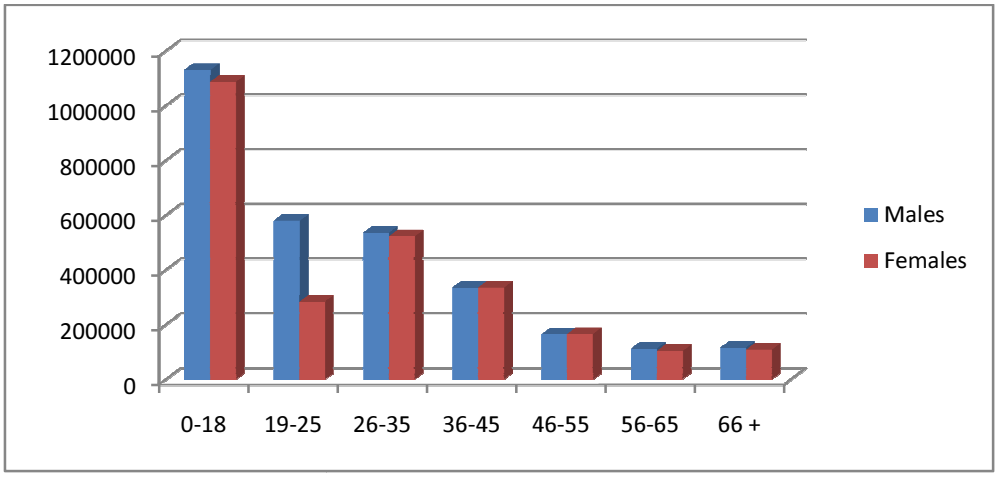

Figure 3 Libyan Age profile

A resource is the general organization of public information webpage: http://tinyurl.com/p4aqw7.

The study population includes different groups of the Libyan people. In total 561 respondents took part in the survey; Three hundred and ninety-six (396) participants responded to the online questionnaire hosted on the website of the Libyan Prime Ministry. A hundred and fifty (150) participants responded to the paper-based survey which was provided to three different groups of Libyan citizens (students, engineers and farmers) from ten different cities covering the ten regions in Libya. The survey concluded with in-depth interviews from 15 different key stakeholders on the topic of delivering e-Government

services. Finally, three case studies were conducted to deepen an understanding of some of the challenges which will be analysed and discussed in Chapter Five.

Tables and graphs have been used to present the findings for ease of understanding. The questionnaire questions were grouped under three main sub-headings: respondents' characteristics, level of Internet/computer skills and awareness of e-Government services in Libya.

5.3 Respondents' responses on opinions and attitudes from online-based survey

Three hundred and ninety-six (396) participants responded to the online questionnaire hosted on the website of the Libyan Prime Ministry. A hundred and fifty (150) participants responded to the paper-based survey which was provided to three different groups of Libyan citizens (students, engineers and farmers) from ten different cities covering the ten regions in Libya. The survey concluded with in-depth interviews from 15 different key stakeholders on the topic of delivering e-Government services. Finally, three case studies were conducted to deepen an understanding of some of the challenges which will be analysed and discussed in Chapter Five.

Table 6-Overview of on-line based survey findings

Respondents' Characteristics								
GENDER OF RESPONDENTS				AGES OF RESPONDENTS			EDUCATION	
No. males	% of males	No. of females	% of females	group	No.	%age	qualification	%age
375	94.7	21	5.3	26-35 36-45 46+	196 117 78	50 30 20	PhD. Masters Bachelors High Inst Sec. School	4.3 19.4 43.2 9.8 4.3
Respondents' Level Of Internet/Computer Skills								
ENGLISH LANGUAGE		INTERNET AND COMPUTER SKILLS						
% of literacy in English	% of illiteracy in English	beginners in internet/ computer	average internet/ computer usage	advanced in internet/ computer usage	have problem/ barriers using the internet	have no problem/ barriers using the	cannot afford internet/compu ter	

		usage				internet	
49.2	50.8	8.8	28.5	34.3	19.2	22.3	45.2

Respondents' Awareness / Usage of E-Government Services In Libya

AWARENESS		USAGE OF E-GOVERNMENT SERVICES					
i am aware	i am not awar e	i have used e-Gov.	i have not used e-Gov,	I do not know the Importance of e-Gov.	e-Gov services in Libya is not developed	e-Gov is compatible with lifestyle	e-Gov. not compatible with lifestyle
84.1	15.9	47.1	52.9	40.2	Over 50	14.6	27.8
in-between	don't know	benefitted from e-Gov	not benefit-ted	do not get some kind of services	e-Gov do not provide full services	provides the full services needed	e-Gov provides typical services
57.3	0.3	13.4	7.3	79.3	77.8	8.8	13.4

5.3.1 Findings, Analysis and Discussions on Respondents Characteristics

The researcher used questions to find out the age distribution, gender, location, occupation and educational qualifications. The reason behind this is to help the researcher and policy makers on e-Government services find out which group of people needs to be focused and to distribute available resources effectively (See Appendix D). Also as mentioned in the literature review, awareness of respondents' characteristics for example age, gender, location, education and occupation will help the researcher to come out with appropriate strategy which will be tailored to the specific needs of particular groups.

What is your Gender?

Statistically, 94.7% representing 375 respondents were males. Only 5.3% representing 21 respondents were female. The researcher attributed the wide range between male and female to the lack of infrastructure and socio-cultural practices in Libya. It might also be that women in Libya in general are not allowed to go to internet cafes and there are limited with access to the internet at home.

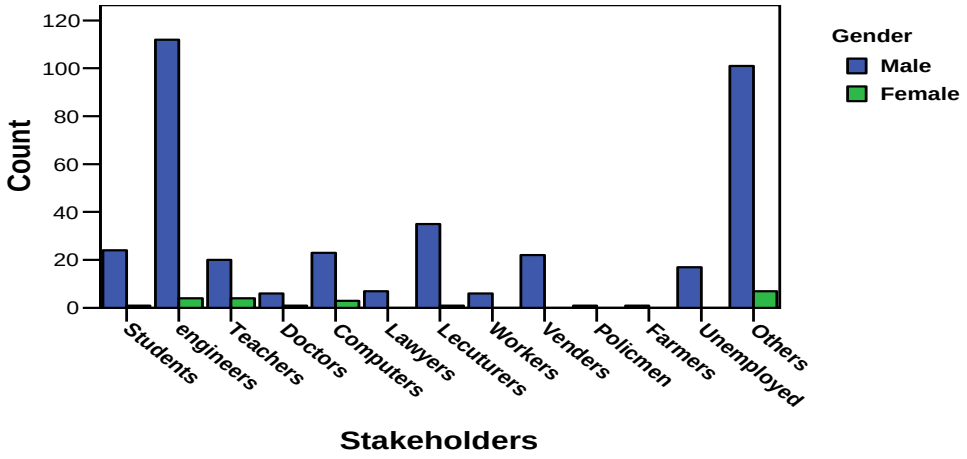

Figure 4: Gender Distribution for Online-based Survey

The general population of Libya is 5.3million and approximately half are women (Table 5). It could be argued that to be able to implement e-Government services effectively the general population must get involved to increase participation rate as posited by (Abanumy et al 2005) in the literature review. Again the findings seem also to confirm what was found out in the literature review that effective implementation of e-Government services in Libya should start from the basis, by creating the awareness of the people both men and women equally and also deal with potential cultural practices that may put certain people in disadvantage position.

The online survey attracted respondents from different cities, towns and throughout Libya. This confirms the assertions from the literature review and problem definition in (Chapter One) that effective implementation of e-Government services in Libya could provide, availability of technological infrastructure and empower and involve all in the economic and political development.

It can be observed that 47.7% of the online respondents were between the ages 26-35 years. 12.1% of the respondents were between 19-25 years. 29.3% of respondents were between 36-45 years. 11.1% of respondents were either less than these ages or greater. This result indicates that most internet users in Libya are relatively of middle age. The age disparities of respondents seem to be the manifestation that most of internet/computer users have graduated from Universities, High Schools and other Educational Institutions. This indicates that formal education as stated in the hypothesis and in the literature review could

contribute to create awareness and to empower the people to use e-Government services in Libya.

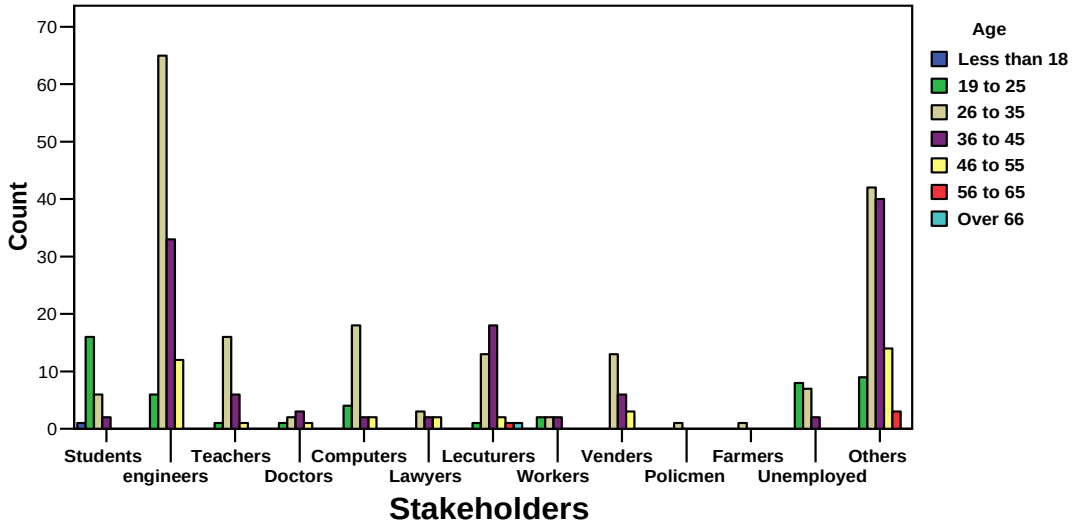

Figure 5: Age Distribution for Online-based Survey

Another significant finding from the online survey with respect to the age distribution was that there was only one respondent from the less than 18 year bracket. This also confirms the findings from (Chapter Three) that socio-cultural practices and lack of technological infrastructure seem to present a challenge with respect to participation and effective use of e-Government services in Libya. For instance socio-cultural practices in Libya do not allow minors to use the internet/computer. In addition to that the expensive nature of internet services provision in Libya could make it highly impossible for minors to afford the cost involved. It could be inferred from the survey that less than 18 year old respondents are supposed to be in full time education and therefore needed access to internet/computer in schools. However as Fitzgerald, 2005 and Janet, 2004 said in the literature review that socio-cultural practices as well as infrastructural provision in Libya is a serious challenge in implementing e-Government services in developing countries including Libya. Furthermore, Engineers between the ages of 26 and 45. A further investigations into this results revealed that most University Engineering departments and Colleges have computer laboratories and internet connection which enable students to use ICT to learn new technologies and skills in the discipline.

5.3.2 Findings, Analysis and Discussions on Respondents Level of Internet/Computer Skills

Questions were used to find out about the level of literacy in the English language, computer/internet skills, frequency of time and location from where they use the internet. In addition the first time respondents used the internet/computer and purpose of surfing the internet as well as compatibility and cost with respect to using the internet/computer. The researcher used the above questions because most of the websites at World Wide Web (www) are written in the English language hence level of knowledge in English could serve as a barrier in surfing the internet.

For instance the frequency of using the internet and location from where respondents were using the internet may lead to the awareness of respondents' familiarity and availability of the internet/computer technology already existing in Libya. Finding out about all the above will help evaluate the potential barriers that may prevent the Libyan people from using e-Government services. The results in the findings may also help policy makers/government how to implement e-Government services effectively in Libya.

What is your educational qualification?

The online survey revealed that 43% of respondents have Bachelor degree, 22.5% were in High School and 23.7% respondents have studied up to postgraduate level. Only 0.5% of the respondents had no formal education. The interpretation to these findings could be attributed to the fact that education in Libya is free. For example more than half of the entire population are in some form of education (Table 5). On English language literacy 49.2% said they can read and write in English. 10.9% of the Engineers who took part in the survey were literate in English. However, more than half (50.8%) of the total respondents do not have any knowledge in English language. The impact of the findings potentially serves as a barrier to surf on the www and other Internet resources as posited by Dugdale et al (2005) in the literature review as a challenge in the effective implementation of e-Government services in Libya.

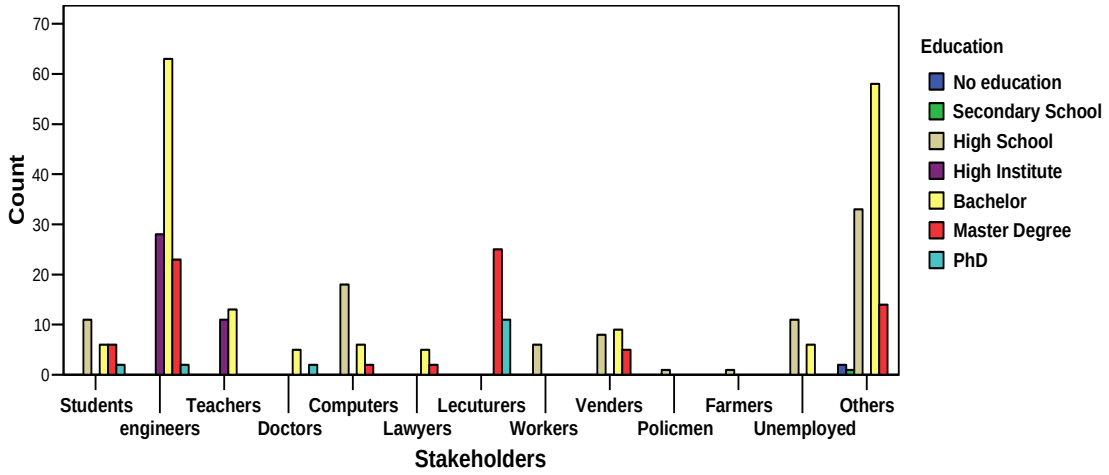

Figure 6: Education Distribution for Online-based Survey

The results on computer skills specify that about 28.5% representing 113 of the total participants have working knowledge typical of computer skills. 28.0% representing 111 of the respondents indicated that they have more than typical. 34.3% representing 136 of respondents have advanced computer skills. 8.8% are just beginners or have basic skills in computing. The findings indicate that, almost all of the respondents (nearly 81%) have at least typical computer skills. This seems to buttress earlier findings from (Chapter Two) and 3 that provision of relevant infrastructure could facilitate the effective implementation and participation in the e-Government services in Libya. Again it could be deduced from the findings that there are already a large number of internet/computer users hence creating peoples' awareness about e-Government services and its benefits seem to be one of the important factors needed for the successful implementation and participation of e-Government services in Libya.

The online survey revealed that 60.4% of the participants have access to computer/Internet in more than one place (at work, at home and at internet café). Approximately 23% of the participants indicated that they have access to internet both at home and work places. However, it was also revealed that internet café is the single most popular place where most respondents get access to internet. This implies that many respondents have no regular access to Internet. The problem could be that in most places, cost of usage particularly at home, lack of awareness as well as socio-cultural practices contributed to the greater number of respondents not having regular access to the internet. This may also be due to the unavailability of technological infrastructure probably as a result

of economic sanctions imposed on Libya by the United Nations as mentioned in the problem definition with respect to challenges of Libya Mark, (2005). It is important to note that this trend of affairs may have the potential to stifle the effective implementation with respect to e-Government services in Libya.

Table 8 and Chart 8 in Appendix A, show that significant number of survey respondents' (46.0%) started using the Internet/computer 2 to 5 years ago. 29.3% of respondents have been using internet/computer more than six years but less than 10 years. About 10.1% of respondents (40) indicated that they have been using Internet/computer more than 10 years ago when they were studying abroad. Only 14% said that they started using internet less than two years. This result can be attributed to the early introduction of internet resources to some professionals for example engineers, lecturers, and medical doctors in Libya. In addition Libyan nationals who studied abroad had earlier exposition to the use of internet/computers. These findings seem to confirm from the literature review that education is an effective tool to create or/and improve peoples' awareness and participation of e-Government services implementation in Libya Abdulrazzaq, (2003).

Significant percentage of respondents (62.9%) indicated that they use internet daily, 26.3% also said they use internet 3 to 4 times a week and 9.6% ones a week Appendix A, (Table 9 and Chart 9). In spite of the limited access to internet from home, work, schools and in the universities many of the internet users in Libya are excited about the technology. This suggests that given the opportunity in the form of training, providing the infrastructure (Abdulmohsen, 2005b) and creating the awareness on the implementation of e-Government services the people of Libya may use the facility.

Here again, on the respondents' time spend on using the internet it was noticed that very high number of Internet users (participants) 84.7% spend less than 5 hours whenever they get access to internet. Findings from the online survey (Table 11 Appendix A) indicated that, there is a little chance that respondents' may access e-Government service website(s). This is because they might have access to the internet for a specific purpose rather than browsing the e-Government services website which seems to provide information rather than services. However, there may be other barriers such as technological challenges, cost, work

pressure and awareness which might prevent many of the respondents' from staying online for long period.

5.3.3 Findings and Discussion of E-Government Services Awareness

Under the e-Government services awareness and participation in Libya, questions were asked to find out about participants' awareness, visiting and the necessity to use e-Government website. Again the researcher used the questions to find out the compatibility of using e-Government services with lifestyle and culture of respondents. Furthermore, questions were used to find out about the extent at which e-Government services in Libya have been developed to meet the needs of the respondents. It was found out from the research questions and the problem definition stated in (Chapter One) that finding out information from all the above will help to deduce the strengths and weaknesses of effective implementation of e-Government services in Libya.

To what extent do you see using internet compatible with your lifestyle?

From the results it was found out that a large number of respondent's (93.2%) surf on the Internet for more than one reason. Only 0.3% of respondents indicated that the main cause of surfing the internet is to access e-Government services. This indicates that most respondents surf on the internet for different purposes other than e-Government services. These findings raised questions about why respondents do not surf the e-Government website in Libya. This could be attributed to lack of respondents' awareness, trust and compatibility of using e-Government services in developing countries like Libya as was found out in literature review.

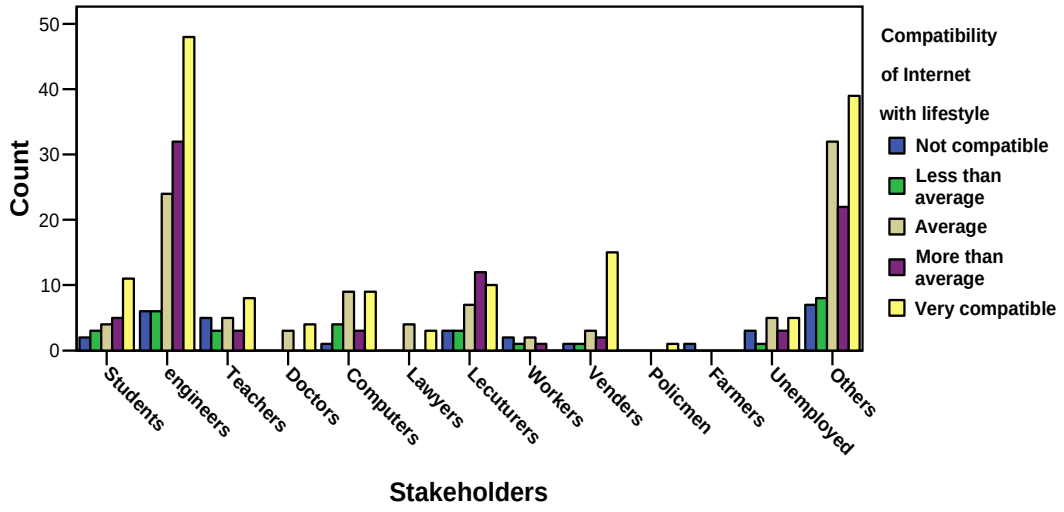

Figure 7: Compatibility of Using Internet with Lifestyle for Online-based Survey

The outcome also signifies that using the internet, for most of the participants, has become part of their lifestyle. Ironically using the internet to find out information from e-Government services is significantly low (0.3%). Factors such as participants' trust of their government, awareness and culture as mentioned in (Chapter One and Three) may play a crucial role to explain why most of the respondents choose not surf the e-Government services website in Libya.

Do you consider yourself aware of what e-Government services is all about?

Significant number of participants (84.1%) indicated that they are aware of e-Government services. However, in the subsequent question that followed to find out about the benefits users derive from accessing e-Government services as well as the cost, 13.4% of respondents said they find e-Government website useful, 7.3% said they do not see the benefit of the facility a huge 79.3% were of the view that there are some kind of benefits from using the e-Government services. It must be noted that the question did not particularly refer to the current e-Government website and the services it provide in Libya. The respondents' views were a representation of the general awareness and benefits of e-Government services. From the findings respondents were of the view that there is reasonable justification of government investing in e-Government services in Libya.

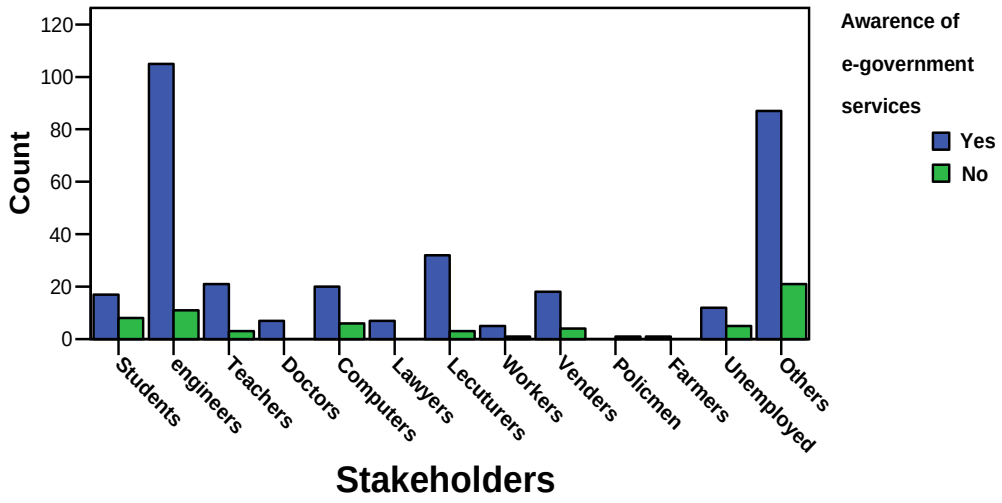

Figure 8: Awareness of e-Government Services For Online-based Survey

Respondents' were asked if the current e-Government services provide them with the services they need 8.8% were positive, 13.4% were not sure however, 77.8% said the e-Government services in Libya do not provide them with the services they need. This findings support the earlier findings as well as the problem definition, challenges in the literature review which emphasise that in Libya relevant government services are treated as secret and belong to the government official. It also confirms the fact that the people at the government offices are corrupt, nepotism. They prefer those who use their services to turn up at their office personally so that they can practice favouritism or extort bribes from them.

Many respondents did not answer a range of open-ended questions that followed the e-Government services awareness option. However, respondents mainly from the North Eastern region of Libya for example; Benghazi, Jdabia, Durna, and Tubric provided answers to the comments on the open-ended option questions. As a follow-up to their comments by the researcher, surprisingly the respondents were able to provide a list of government services that could be delivered electronically in Libya. This confirms that involving people, creating the awareness and engaging them in the implementation of e-Government services is very critical for its success Abdulrazzaq, et al. (2003).

To what extent do you consider yourself ready to use e-Government services if you are trained to do so?

Stakeholders including teachers, lawyers and labourers were asked about their readiness to use e-Government services in Libya if they are trained to do so. The results show that only few participants (14.6%) are not ready or less ready to use e-Government services, 16.2% are not sure and 55.8% said they are ready if they get the necessary training. These stakeholders are not ready probably because of factors such as lack of technological skills, cost, and unavailability of internet infrastructure. It could also be unfamiliarity, trust and negative perception of internet. It could be inferred from the responses as confirmed by the problem definition that adequate and relevant training programmes are necessary for the effective implementation of e-Government services. Most of the participants (68.4%) indicated that they are willing to use e-Government services if the government offer the proper courses and provide the needed support to users of the new technology.

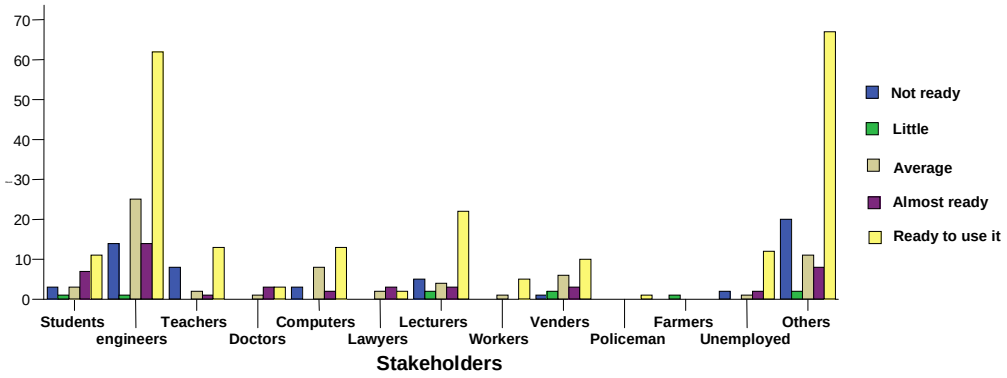

Figure 9 Readiness for Using e-Government Website if You Got Fitting Course For Online-based Survey

As shown in Appendix A, (Table 17 and Chart 17) substantial numbers of participants (40.2%) have no idea about the necessity of e-Government services. Most respondents indicated that their first one or two hours online are devoted to checking their e-mails. They do this as a way of spending less time and money on access. This implies that cost is one of the strongest barriers which prevent respondents from surfing more than one e-Government services website. In addition, very few (3.0%) of respondents think the current e-Government services are not significant. More than 40.0% of the respondents said they do not know the significance of using the e-Government services in Libya. Reasonable number of respondents (11.0%) believes that the e-Government services offered at present is significant. This seems to demonstrate that the necessity of e-Government services is highly unknown to many Libyan internet users, let alone the non internet users?

Is the e-Government services website developed enough in Libya?

A reasonable number of participants (44.2%), nearly half of respondents think that e-Government services need total development to meet the needs of the people intended to serve. About 20% of the respondents think that e-Government services in Libya needs total overhaul, 30.6% said e-Government services website seemed developed and very few respondents (6.1%) agreed that e-Government services in Libya seems alright but needs only some improvement.

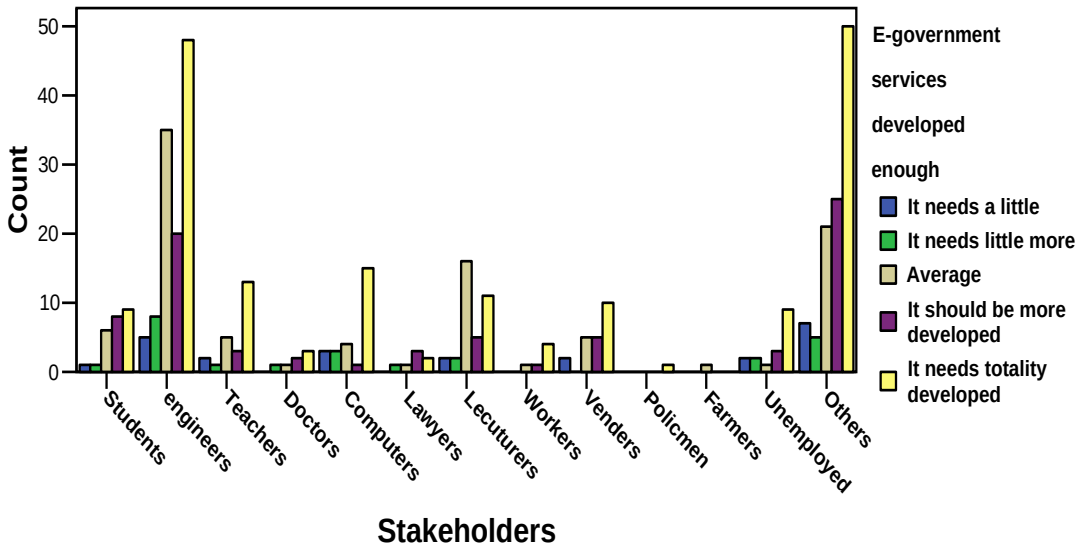

Figure 10: Has e-Government Services Developed Enough For Online-based Survey

This indicates that e-Government services is not developed enough and do not provide sufficient services to the people the facility intend to serve. In respect of the open-ended questions which followed this question, most stakeholders provided no comments and those who answered (from North East areas) seems to have good ideas what government services could be delivered electronically. This result indicates that there are already existing challenges as mentioned in literature review.

5.4 Findings, Analysis and Discussions of Paper-Based Survey

The questionnaires were distributed in equal numbers to stakeholders in each of the cities; there were five stakeholders for each group, to give a total of 15 stakeholders in every city. This allowed the researcher to collect equal amounts of information from each area of Libya in order to respond to the research question (Table 2 and Chart 2)

The stakeholders ranged from less than 18 years old to over 66 years old. A significant number of participants were between the ages of 19 and 25, as well as over 66; the typical respondent was between the ages of 26 and 65, and few respondents were less than 18 years old. Consequently, the respondents involved were of different level of ages (teenager to oldest people) in Libya and that made the findings from this survey more robust because the view of all level of the demographic structure of Libya were sampled. Freeman, 1986 said that involvement of all stakeholders and the key players at different levels of society facilities successful e-Government implementation.

Respondents' responses on opinions and attitudes from paper-based survey

Table 7-Overview of Paper Based Survey Findings.

Respondents' Characteristics								
GENDER OF RESPONDENTS				RESPONDENTS AGE			EDUCATION	
No. males	% of males	no of females	% of females	age group	no.	%	qualification	%age
-	91.3	-	8.7	Less 18 19-25 26-34 36-45 46-55 56-65 66+	- - - - - - -	3.3 28.7 8.7 12.0 12.7 12.0 22.7	Bachelors Sec. School Tech. Sch. Primary Sch. Sharia Educ. No Formal Edu.	33.3 38.0 0.7 9.3 8.0 10.7

Respondents' Level Of Internet/Computer Skills							
literacy in English	illiteracy in English	never used internet/ computer before	beginner/ basic level of using internet/ computer	never used internet	have problem/ barriers using the internet	place of using internet	barriers to internet/ computer usage
82.7	17.3	62.0	42	62.0	19.2	cafe-25.7 SCH-5.3 both-6.0	cost-96.7

Respondents' Awareness / Usage Of E-Government Services In Libya

i am aware	i am not aware	i have used e-Gov.	i have not used e-Gov.	ready to use if trained.	necessity of e-Gov. services	compatibility- of e Gov with lifestyle	the extent of e-Gov dev.
35.3	64.7	23.3	76.7	52.7	necessary 5.3 not necessary 24.0 don't know 70.7	compatible 14.0 not compatible 12.7 don't know 47.3	needs dev 10.0 needs total dev 17.3 e-Gov has benefit 24.0 has no benefit 14.0

5.4.1 Findings Analysis and Discussions of Respondents Characteristics

Three different stakeholders responded to the survey. Statistically, 91.3% of the respondents were male, and only 8.7% of respondents were Female. One of the stakeholders (farmers) there was no female respondent.

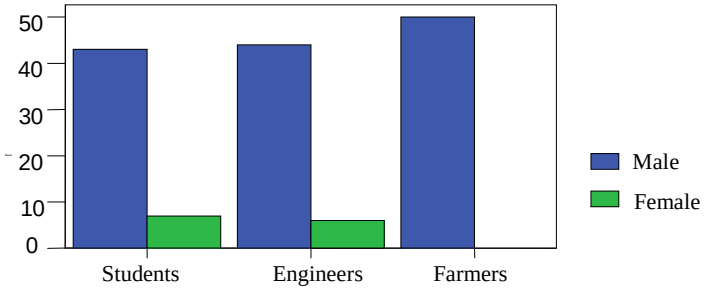

Figure 11 Gender Distribution For Paper-Based Survey

Very few females were from the students and engineers. However, the female response rate from the paper-based survey seems to be a little higher than the online-based survey. This may be attributed to the socio-cultural practices of the people in Libya.

What is your age?

Respondents 3.3% were less than 18 years old, 28.7% were from 19-25 years old, 8.7% were from 26-35 years old, 12% were from 36-45 years old, 12.7% were from 46-55 years old, 12% were from 56-65 years old and 22.7% were over 66 years old.

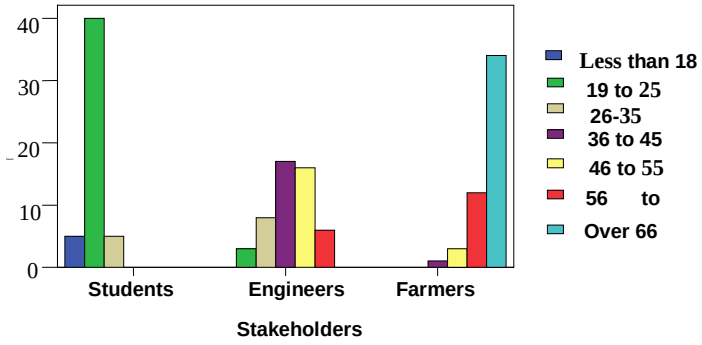

Figure 12 Age Distribution for Paper-Based Survey

The above question was used to collect data from the different age groups to be able to have different opinions, attitudes and beliefs of the various stakeholders (students, engineers and farmers). The implication of the findings suggests that variety of different age groups responded to the survey even though respondents who were less than 18 years seem to be less represented.

5.4.2. Findings, Analysis and Discussions on Respondents Level of Internet/Computer Skills.

What is your Educational Qualification?

Many of respondents indicated that they have obtained secondary school and degree level education. Only one respondent had technical education. Almost half of the respondents have Primary school and Sharia (Appendix B, Table 4 and Chart 4). Significant number of participants said they have good knowledge in English language. Only 17.3% said that they do not have any knowledge in English Language (Appendix B Table 5 and Chart 5).

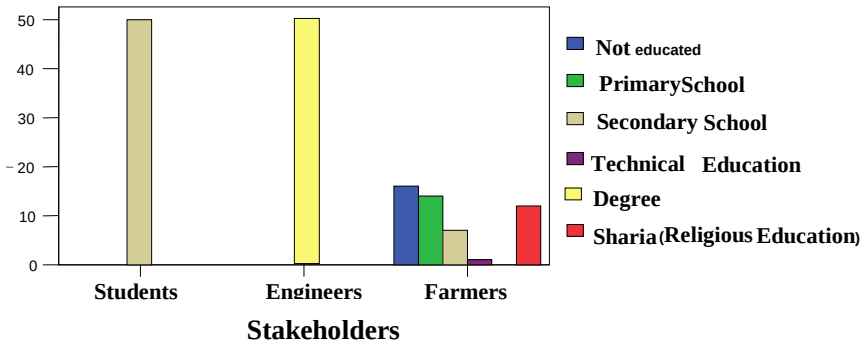

Figure 13 Education Distribution for Paper-Based Survey

The question was posed to find out about the educational background of respondents. The responses confirm as stated in the literature review that education could play a crucial role in creating awareness and participation of e-Government services.

The results on computer skills indicate that the majority of the participants have no computer skills and twenty percent (20%) of them are just beginners. The largest parts of the respondents have never used Internet before. It was identified that only twenty six percent (26%) of the participants have used Internet and none of the participants have access to internet at home or at work (Appendix B Table 7 and Chart 7). The findings could be attributed to lack of internet/computer technology as stated in the literature review.

In addition results of period of first time use of Internet are presented in (Appendix B, Table 8 and Chart 8)**.** The findings confirm that there is lack of infrastructure and late introduction of internet/computer in Libya. As the frequency statistics indicates, most (62.0%) of the participants said they have never used the internet. 9.3% said they use the internet ones a month, 13.3% used the internet ones a week and very few of the participants (15.3%) said they use the internet 3-4 times a week, (Appendix B, Table 9 and chart 9).

Do you think using internet is compatible with your lifestyle?

The graph below shows the compatibility of using Internet with lifestyle**,** nearly half (48.7%) of the participants' said they do not know what the internet is about. However, 12.7% said the internet is not compatible with their lifestyle. 38.6% were not sure with regards to the compatibility of the internet and their lifestyle.

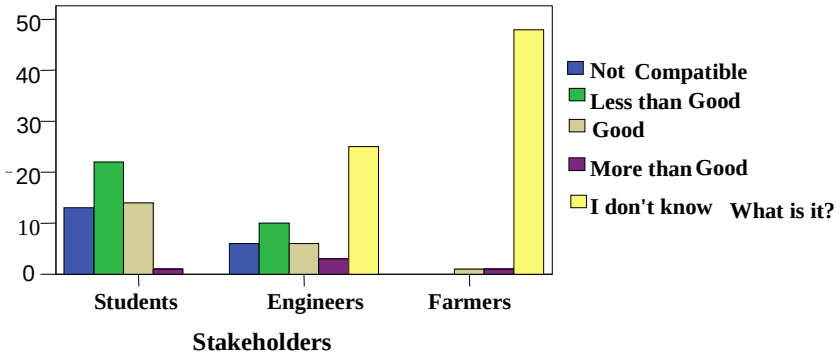

Figure 14 Compatibility of Using Internet with Lifestyle for Paper-Based Survey

The results from the above chart in contrast to the similar chart in the online-based survey suggest that a greater percentage (61.4%) maintain that the internet is not compatible with their lifestyle.

5.4.3 E-Government Services Awareness and Participation in Libya.

Still huge numbers of participants (64.7%) are not aware of e-Government services. However, about 35.3% indicated their awareness of e-Government services (Appendix B Table 14 and Chart 14).

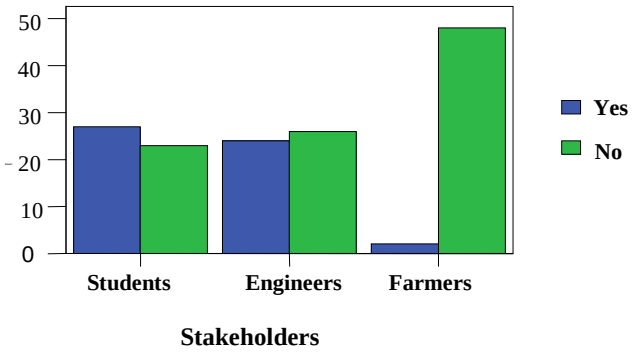

Figure 15 Awareness of e-Government Services for Paper-Based Survey

As shown statistically, still vast number of respondents (76.7%) have not visiting e-Government services website. The farmers group is the group with a minimum of visit which, indicated that education has significant influences on improving people's awareness. The results also show that few participants are still not ready to use e-Government services

website. This confirm that lack of computer literacy, availability and cost of internet access have negatively affected the use of e-Government services.

Substantial numbers of participants indicates that they have no idea about the necessity of e-Government services. The result suggests that lack of awareness of technology and inadequate Internet related infrastructures available to all stakeholders might have accounted for this outcome. Conversely, only a small number of participants believe that e-Government services are necessary. Still a large number of participants (more than three quarter) do not know whether e-Government services have developed enough or not since they don't know what it is.

On the question cost effectiveness of using the e-Government services: nearly the entire farmers sampled and half of the student stakeholders do not know. Also most of the participants, who said there is no advantage, are from the same stakeholders group. Only 25.4% representing 38 engineers said it is suitable or/and typical suitable for the expenses.

It can be verified that only 13% of participants agree that e-Government services is a necessity. While, a significant number of the participants think that the Libya e-Government services does not provide a necessary service via its website, more than half of participants said they do not know.

To what extent do you consider yourself ready to use e-Government service website if you get appropriate training?

Most of the participants (63.4%) are willing to use e-Government website if the government provides relevant training, accordingly participants may have the skills to access e-Government website easily.

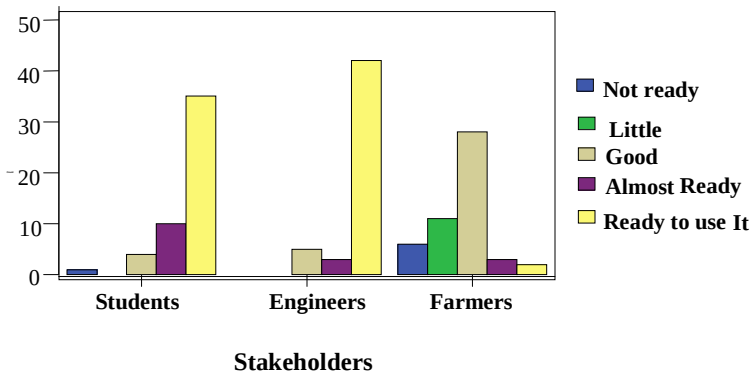

Figure 16 Readiness of Using e-Government Website if You Get Appropriate Training For Paper-Based Survey

The chart above demonstrates respondents' opinions. Consequently, 12.0% of participants still not ready to use e-Government website even if they are given training. This confirms earlier findings from the literature review in (Chapter Three) and in the online-based survey that lack of internet/computer literacy and technological infrastructure are some of the challenges that may militate against e-Government services implementation in Libya.

Do you consider Libyan e-Government services developed enough?

Extensive numbers of participants (72.0%) nearly three-quarters do not know whether an e-Government service is developed enough in Libya.

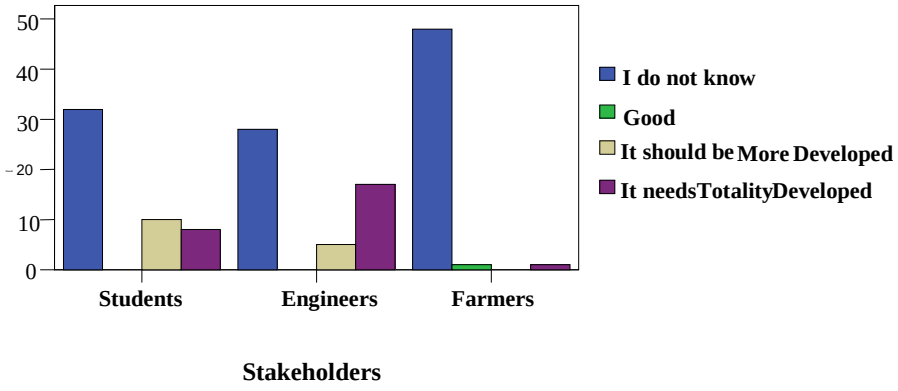

Figure 17 Have e-Government Services Developed Enough for Paper-Based Survey

This is confirmed in the above chart. Almost the entire farmer stakeholder (48 out of 50) who took part in the survey said they do not know whether e-Government services is developed enough as they do not know what e-Government service is about and the kind of services it offers. It could be inferred from the literature review, and the expectation in the hypothesis that farmers may have lowest awareness of e-Government services in Libya. In contrast to the hypothesis expectation it was found out that engineers have the highest awareness as compared to students and farmers.

Further investigations revealed that in engineering colleges the internet/computer is already in place and most of the units of their courses are written in English. Consequently, this enabled engineers to be more aware, participate and use e-Government services. This further confirms that availability of internet/computer and knowledge in English language are critical for the successful implementation of e-Government services in Libya.

5.5 Findings, Analysis and Discussions of Interviews

5.5.1 An overview of Interviewee Responses

Six key players took part in the face-to-face interviews. To be able to answer the research question in (Chapter One) “What are the main factors that may contribute to successful implementation of e-Government services in Libya?”

Results from the interviewees provide circumstances, usage of ICTs tool in Libyan and identifies challenges, problems and barriers that may support successful e-Government services implementation in Libya. Interviews typically took about 2 hours. Good practice and experience of other countries that was gained from the literature review which may impact on the success of e-Government services project were evaluated by the primary data. Participants’ were asked questions on their opinions, attitudes and believe on awareness of e-Government services in Libya, the barriers which prevents the use of new technologies such as: compatibility, cost, culture, infrastructure of e-Government services with their lifestyle.

Table 8 Backgrounds of interviewees

N.	Key Stakeholders	Reference (KP) Key Player
1	Director for media and Website department at Libyan Prime Minister	**KP1**
2	Director of Libyan internet association & director of economics information centre at Ministry of economics	**KP2**
3	Academic University Staff	**KP3**
4	The director of Arabic association for internet Cyberspace at League of Arab States	**KP4**
5	the director of computers and Internet usage and learning Centre	**KP5**
6	Internet agent	**KP6**

Interviewee Awareness of e-Government services in Libya

With all the six officials who were interviewed there was a common thread which passed through their responses; they were of the view that education improves knowledge, skills, and technology transfer and increase awareness of e-Government services.

Interviewees view on the extent at which e-Government services is developed in Libya

During the interview it was also found out that the available infrastructure in Libya is not developed enough to support the implementation and participation of e-Government services. The interviewees were of the view that available e-Government services as at the time of this study only provide basic information.

Barriers of using new technologies

All of the interviewees were of the view that they have no particular barriers to using the internet/computer and to access government websites such as English language, cost and the skills needed to do so. Nonetheless they were of the view that there are huge barriers in Libya in general and some mention inadequate infrastructure as some of the barriers. It is worth mentioning here that those interviewees had their education abroad and most of them in English speaking countries. Again as a result of their educational background they have good jobs to be able to afford computers/internet.

Compatibility of using new technology

The six respondents agreed that internet/computer usage has become part of their daily life and find it compatible with their culture. They again said that they spend on typical about four hours a day accessing e-Government websites in Libya for information sometimes as part of their daily demands of their jobs.

5.5.2 Findings Analysis of Interviewee Responses

All interviewees were asked questions on awareness, participation, and period of use of internet/computer and general barriers that may prevent the use new technologies. Full questions will be found (See Appendix C)

KP1**:** said that:
"Education enables people to be aware of e-Government services and develop skills on usage of new technologies.

There is a lack of infrastructure of technologies in general and in Libya as at 2007 dialup internet connection are used in most of the cities which cost about 50 Libyan Dinar (LD) monthly and Asymmetric Digital Subscriber Line (ADSL) is limited in use.

Libya is a large country in area but small in population, internet and computer users are very few. There is no postal network that will encourage people to use available e-channels such as e-Government services Website, TVs, and Mobile phones.

We are doing our best to make these infrastructures available everywhere and any time. For instance currently, all government agencies have WebPages delivering information and some services on the daily activities to the people. We have monthly meeting for evaluation of progress on e-services. KP1 said, people are interested to use government Webpage and in the first year (2005) more than 500,000 people visited e-Government services website. However, KP1 agreed that still there are lots of work needed to be done as result of comments and questions from the webpage users.

However, it needs professional people in different level of implementation to guarantee a success. I am happy with my team progress so far and hope e-Government services improvement will not lead to job losses as speculated by some employees.

Since we are large country in area and small in population e-Government services will reduce the destinations between us and our internal and external customers as well as time and effort for government and business staff. It will also improve government accountability,

transparency and commitment which we are looking for as government. KP1 agreed that lack of computer literacy and access to Internet resources constitute a significant challenge.

KP2 was with the view that: “studying in Canada improved my knowledge of e-Government services, usage of Internet and computer.

I am very familiar with the use of computer/internet; most of my daily job depends on using internet and computer.

Guarantee of successful implementation of e-Government services project demand that many activities like understanding of partners needs, structure of technology, stakeholders influence on project implementation…etc are taking seriously.

I prefer to finish my work electronically but technological infrastructures are limited, few people have skills of using internet and computer professionally, fewer people are aware of e-Government services and its advantages.

People in Libya are more familiar with TVs and Mobile phones rather than internet and computers. Cost of using internet for example Dialup cost 50LD monthly in Libya, ADSL are limited in some places, implementation of e-Government services project needs hard work, time, experts in ICTs area, cooperation across government agencies, civil organisations, business and citizens, and suitable budget for implementation ICTs in Libya are new and specialist people in the area are very few.

No postal network, in general and there is no appropriate communication tools, because of that I believe the new technologies will be accepted by the people. This will enable them carry out their daily transactions effectively particularly with the new generations. Suggestions for the successful implementation of e-Government services will rely on availability of enough budget, internet and computers everywhere (at school, at work and at home) any time. Intensive training courses particularly to staff both public and private organisations, students, will improve and overcome the illiteracy of new technologies usage.

I'm unhappy about Libyan e-Government services progression. Fully developed e-Government services will not threaten my organisation it will improve it. Yes I have been supporting "e-Government services implementation yes I'm up to date".

KP3 Expressed the following with regards to the questions asked: Yes I'm very familiar with usage of technologies since my background is computer science. I studied at Newcastle University in England for two years where I used e-technologies every day. The most important factors to consider when delivering services electronically to different sectors in Libya are: to assess resources, structure, strengths and weaknesses of each partner. Define goals and objective of e-Government services, empower the management team and develop work plan. Build on other countries experience, define resistance to change, and find out from where you have to start.

My usage of internet and computer is more than eight hours a day, my experience on usage computers more than 14 years so I am an advanced user of the technology. I have access to internet/computer at work which is easy for me to get access to e-Government website.

Yes I don't have any problem in dealing with English web pages. At home I'm paying 50 Libyan pence in an hour. Particularly at home where getting access to internet is very slow this waste lots of time and money, as I said before using internet at home is not cost effective; however at work it fits very well.

Libyan government website provides information rather than services. e-Government service is new ways which make use of ICTs to deliver government services to citizens, business and cross government any time any where aimed at improving efficiency, accountability and transparency of government.

Yes I prefer to use electronic way it saves time, money and effort. But currently there seem to be no services delivered electronically at the e-Government website. Hopefully our government will someday can deliver full services to the people of Libya.

Yes it is fitting with me because I can easily use the new technology. With respect to e- government website there is nothing apart from the provision of information. However from the side of businesses yes there are some services such as services provided by Almadar and Libyana Mobile phone companies as well as the Commercial Banks, nonetheless the services they provide are limited.

Yes e-Government services should be supported and I will support too if I am involved. There are lots of advantages from e-Government services such as increase in the awareness of Gov and business staff of using such new technologies. This also will reflect positively on the lives of citizens and the economic growth and development of Libyans.

KP4 I am happy to use new technologies as a lawyer, as long as those technologies are able to support and improve the advantages of e-Government services and human rights for people.

Relatively, I spend almost four hours a day browsing on the internet and more than four hours using computer, I am very much interested using the internet, yes it is very easy for me to get access to internet.

Yes I don't have any problem dealing with English web pages, As you know I'm living in Cairo-Egypt regarding to my work and the internet cost is 95 Egyptian Pound per month.
Access to internet should be free and for all, in my opinion there are no real e-Government services so far implemented in Libya and/or in Arabic countries. I know e-Government services support human rights such as liberties and transparency in government business.

Yes I prefer to do my job and dealing with others electronically. But unfortunately there is no e-Government services provided up to now in Libya. There are too many services that should be delivered electronically to the people from 'cradle to grave'. Government has to start delivering services to citizens and business now. There are many important advantages such as: reduce some of machines (travelling in cars, planes, trains etc) that hurt the environment, empowerment, respect of human rights and reduce cost, time and effort for all.

No as that is my job as Director of Arabic Association for Internet Cyberspace I use internet/computer to contact others. No I don't like using traditional way since there are lots of problems such as bureaucracy, corruption and nepotism.

Yes e-Government services will improve our experience and skills of using internet/computer. I do support the implementation of e-Government services, that is my job and others should support it too particularly government should demonstrate commitment as well as people with higher education".

Internet and computer literacy is very low (awareness) in Libya, and people are not well prepared to use this new technologies … availability of internet are limited and there is slow progress in providing such important technology"**.**

KP5 Is the Director of Computers and Internet usage and learning Centre. The interviewee owns an internet and computer centre where Libyans people who are interested in the new technology are trained to use the internet and computer skills. The following questions were asked during the interview.

I have no problem of using internet/computer and browser different search engines.

"Education enables me to open this centre provided course to people and also improve myself as well. I am aware of e-Government services. I find new technology compatible with my lifestyle". Internet access is not available in many places in Libya and that may be due to lack of infrastructure of technologies in Libya and the current availability as at 2007 is dialup internet connection. This seems to be slow in most of the cities and it cost about 50 Libyan Dinar (LD) monthly. ADSL is limited in some particular places such as Tripoli and is not everywhere even in Tripoli. Libya is a large country; internet and computer users are very few and most of them are younger people so far.

Internet café owners contribute to provide some courses in the use of internet/computer. This and offers some jobs for the owners and for some qualified people who can teach these new technologies as well.

All current government agencies WebPages only deliver information on the government activities to the people but it is not enough comparing with other government services WebPages in other countries. KP5 said, people are interested and they are asking about Libyan government WebPages and agreed that still there is lots of work to be done on delivering e-Government services to people and make it efficient.

Libyan government WebPages needs qualified people in different level of implementation to guarantee success. I am happy with my work progress so far and hope e-Government services improvement and will not lead to job losses as speculated by some employees.

Yes providing e-Government services will reduce the waste of peoples' time and effort as well as speed of government business. It will also improve government accountability; transparency and commitment which all Libyans expect. KP5 agreed that lack of computer literacy and access to Internet resources in most places in Libya constitute a critical challenge that may face the implementers of e-Government services project in Libya.

KP 6: is an internet agent who sells access to internet users.

I have no barriers using new technologies.

Yes education, money and personal relationship enables me to be an agent of internet in Libya. Yes it is the demand from people but it is not like the capital where ADSL services are available. We provide dial up which is very slow and people are not happy and suffering from it. Yes it is contribute to people and also improve myself since they ask questions that I do not know it before. Yes I am aware about e-Government services and I also do visit to some government agencies WebPages. I find the use of new technologies compatible with my lifestyle.

Internet access is not available in many places in Libya and that may be due to unavailability of technical infrastructure in Libya. The current availability is access through dialup connection in most of the cities which is slow. We do hope that the General Telecommunication Company will improve and provide high speed services in the future which will increase demand and usage by Libyan people. It cost about 50 Libyan Dinar (LD)

monthly and ADSL is limited in some particular places in Tripoli. Libya is a large country; internet and computer users are very few and most of them are younger people, businesses, some university staff, journalists and poets.

I do contribute by providing internet access and selling computers as well. This enables me to offer some jobs to qualified people in this filed. So already I am part of e-Government services implementation project.

The current government agencies WebPages only deliver information on the government activities to the people but it is good starting point which will make people familiar and develop the habit of new technologies usage. No the current government WebPages is not developed enough comparing to other WebPages in the other countries. Yes many people are interesting to own computers and gain access to internet and they are looking forward to government to make it affordable in relation to their income. KP6 agreed that still lots of works should be done by government and private people to reach the level where people can fully integrate with efficient e-Government services in Libya.

Libyan government needs qualified people that know how to design, improve e-Government service project and make it easy for the current Libyan situation.
Yes I am happy with my work progress so far and hope that Libyan General Telecommunications Company will improve access to internet and make it available everywhere anytime. This will also improve our business as well. I do not think that e-Government services will lead to job losses but rather may create many other job offers.

Yes providing e-Government services will reduce time, effort and will speed the procedures of government and people. It will also improve people live economically. Further it will increase transparency and commitment which I think is the target of government and people of Libya.
KP6 agreed that lack of computer literacy and access to Internet resources is a critical challenge in Libya.

5.6 An over View of the three Case Studies Findings

Three Case Studies had been conducted during the primary data collection. This was done to deepen understanding of some of the challenges that may face the implementers, users and policy makers of e-Government services. The case studies are: Alhraba, national vaccination programme and Benghazi blind association in Libya. The three case studies revealed very fascinating and interesting findings with respect to the effective implementation of e-Government services in Libya. This chapter provides the overview and findings of the study. Details of the three case studies are in the next chapter.

Table 9 An Overview of the Three Case Studies

No	The Three Case Studies
1.	First is the Alhraba case study, Alhraba is a remote village located almost at the periphery of the Sahara. This case study seems to confirm an earlier finding from the online, paper-based and face-to-face interview that higher education could create or/and improve awareness and participation of e-Government services. It also seems to confirm the fact that it is better to train people and equip them with the knowledge, skills and attitude they need to use new technologies such as e-Government services. Alhraba case study seems to be a testimony that provision of relevant infrastructure is paramount in the effective implementation of e-Government services in Libya.
2.	The second case study is the National Centre of Fighting Contagious and Threatened Disease (NCFCTD) at Libyan Ministry of Healthcare (LMH). The NCFCTD used SMS messages to deliver services through Mobile phones confirming Libyan people about children vaccination program and when, where it will take place. Further to the point raised in the online and paper-based survey as well as interviews, it was found out that most of the members of the team have had higher education and learned about the use of new technologies as part of their education. It also confirms that the use of mobile phone is a potential channel through which the government can use to provide e-Government services.
3.	Third case study is about the Benghazi Blind Association (BBA). A Blind individual in Benghazi Libya set up a centre of study where he provided courses to his fellow blind on how to use internet/computers. Also This 'blind champion' helped to translate some English written software's into Arabic language. This case confirm that improving peoples' awareness, training and provision of relevant infrastructure as mentioned in the literature review and other primary

	surveys could go a long way to help the implementation of successful e-Government services in Libya. The study also confirms that equal opportunities, respect and dignity be given to all to increase awareness and participation in the implementation of e-Government services.

5.7 Summary

This chapter focused on the findings, analysis, and discussion of the survey tools used to answer the research question 'What are the main factors that may contribute to the successful implementation of e-Government services in Libya'? In addition, also attempt to establish the thread linking the secondary and primary data as well as the problem definition in (Chapter One).

In sum the survey revealed that education is an important tool to create the awareness and increase participation in the successful implementation of e-Government services. The field studies revealed and confirm the earlier findings that provision of relevant infrastructure is critical in implementing e-Government services in Libya. Findings from the face-to-face interviews point to the fact that e-Government services has potential benefits and can propel the growth of Libyan economy, increased transparency and reduce corruption as well as nepotism which seems to be common in Libya. In all the surveys conducted it was established that e-Government services has the potential of closing the 'distance gap' across and between the cities, towns and villages in Libya as well bringing (G2G), (G2B) and (G2C) as mentioned in (Chapter One).

It is worth mentioning that in all the studies there is gender imbalance between males and females. Also there were imbalances between the educated and illiterates when it comes to awareness, preparedness and participation to use e-Government services in Libya.

With regards to culture and lifestyle it was revealed particularly on the paper-based survey that a cross-section of respondents find the use of technology as incompatible and a threat to their jobs and lifestyle. This particular challenge was identified in (Chapter One) and the findings seem to confirm that culture could lead to resistant to change with regards to the successful implementation of e-Government services.

Even though the secondary data identified trust of government in bringing about changes such as e-Government services that may improve their lifestyle, the findings seem to slightly confirm trust as a challenge. In addition the findings revealed that there is a cross-section of respondents who have the skill and are keen to use new technologies. However respondents were of the view that e-Government services should aim at providing relevant services as opposed to mere information that can be received on the radio and televisions.

In conclusion the survey confirms to a greater extent the challenges identified in the literature review as well as the problem definition such as lack of infrastructure, awareness and participation, culture as well as education are areas that need attention in the effective implementation of e-Government services in Libya as well as in developing countries.

CHAPTER 6
CASE STUDIES

6.1 Introduction

In an attempt to answer the research question and also achieve the aims of this study set in (Chapter One), three case studies were conducted as part of the investigation process in Libya. The case studies provide an illuminating real account of Libyan people and their perception of using new technologies, the challenges they face and their opinions on how these challenges could be alleviated if not totally solved. The findings provide a link with the secondary data and other primary data collected throughout this research. The views, opinions and attitudes expressed attempts to provide unique answers to the unique problems and challenges in Libya identified in (Chapter One).

As said earlier in the (Chapters, One and Two) the findings from the case studies attempts to bridge the 'knowledge gap' identified in the (See Section 1.11), which previous researchers seem to have paid very little attention to do so (Table one). This chapter therefore gives detail accounts of the three case studies namely: Alhraba, Benghazi blind association (BBA) and national vaccination programme.

6.2 Alhraba Case Study

Alhraba is small village which lies on the chain of Nafusa Mountain more than 350KM south west of Tripoli the capital city of Libya (See Figure 1) in (Chapter One). From online questionnaire conducted on Libyan Government Website the researcher received e-mail from several respondents that they participated in the online survey from Alhraba village where there is no landline telephone connections. Based on this, a further investigation was conducted to find how people in Alhraba got access to internet which enabled them to participate in the online survey.

The idea of this study is motivated by a desire for deep understanding of the Libyan peoples' awareness defined in this study as knowledge and skills of using computer/internet. In addition also to find out about the existing technological infrastructure in the remotest part of Libya. A visit made to the Alhraba village found that, there is a native of the village who had higher Computer Science education. The native took the charge to establish private

internet café via satellite and started training people, particularly teenagers to develop their skills to use computer and internet. This has made many young people in Alhraba literate in computing, internet and other new electronic technologies.

It was identified during the visit to the Alhraba Internet café that teenagers found using the service were extremely excited and amazed by the various uses of the new technology, for instance, the ability to send e-mails with attachment such as pictures, documents and videos to their relatives and friends in other cities. Interestingly, some of the teenagers found at the internet café were happily sending mails to each other to check how the technology works. Further investigation on how they pay for using the service revealed that some families pay for their children to learn the new technology, but some of the children save their pocket moneys for two or three days to pay for the use of the internet café.

The innovative approach in Alhraba case study where computer expert uses private initiative to train the people of Alhraba on computers and internet have the potential to improve their knowledge, skills and desire to use new technologies particularly teenagers. Moreover, it has helped families in Alhraba Village to communicate with others by sending messages, pictures and other files to relatives and friends everywhere in the world even though they have no telephone lines and network post. It also helped parents in getting information about Libyan government activities without wasting time and money as children tend to pass on information from the government website to their parents. One of the Alhraba internet café users said “there are still few challenges in delivering internet services. The access to internet in the village is only at the Internet café owners of personal computers could not get access to internet from home”. Although, training courses are provided to people who have the means to pay, some people have inherent habit of not taking advantage of this opportunity. Not only this but also the internet café has no facilities that encourage or support people with disabilities to use the service.

It was identified in Alhraba that people who have received training from the owner of the internet café allow such people to become trainers of other people who are not able to pay for the cost of training from the owner of the internet cafe. Interestingly, the owner allows them to use the internet café computers to train others without charging them any extra apart from the normal usage charge. As a result one person in a family can be sponsored to go

through the training provided by the Internet café owner and after completing the training the person then provides training to relatives and friends using the computers in the internet café.

Social relationship in general as seen in the Alhraba case study could be one of the effective tools that create awareness, participation and deal with resistance to change. For instance in Libya, where extended family systems and social bonds are strong it is important to consider this when a major socio-cultural change such as implementing e-Government services are needed. According to the owner of the internet café he uses social relationship (social network theory) to advertise his internet café and the courses he offered to the community. Sitting around fire in a circle, sharing information and stories at night is a common practice in rural areas in Libya. This is where he chooses to inform the members of the village about the internet café then people send the information from the fire side and pass it on to their families, friends and the extended relatives.

6.3 The National Vaccination Programme Case Study

The second case study is about the National Centre of Fighting Contagious and Threatened Disease (NCFCTD) at Libyan Ministry of Healthcare (LMH). The department is responsible for treatment and prevention of early childhood infections such as measles, chicken pox and meningitis. Traditionally the department uses the Libyan TV channel to reach and inform parents about the time, venue and date for vaccination. Surprisingly the researcher whilst collecting primary data in Libya received an SMS messages through a mobile phone confirming to the Libyan people about children vaccination program; when and where it will take place. The convention in Libya is using the Libyan television to reach the masses.

The researcher decided to find out about the changes to the traditional channel of communication and this led to an interview between the researcher and some of the members of the team. In all two clinical staff, four parents and three NCFCTD staff volunteered to be interviewed.

From the interviews some unique problems affecting Libya were revealed, the common thread was that, Libya is a large country in area, small population and there are no postal services. The NCFTCD members agreed that the traditional method of using the

television doesn't seem to working anymore because most of Libyans are using multi TVs channels and do not pay particular attention to the Libyan TVs channel.

The parents interviewed were of the view that sending SMS messages is more effective since information are relayed to particular individuals who need it. Even though there is general lack of technological infrastructure with respect to internet/computer however, mobile phones seem to be common and commonly used by Libyans. The interviewees agreed that using SMS also serve as social networking tool, for instance Libyans traditionally use social networking to disseminate information. The parents expressed that SMS messages are quickly spread between and across neighbours and colleagues.

A member of the NCFTCD was of the view that there is a lack of Internet and computer literacy. However, the interviewee noted that the use of mobile phones was fairly high in Libya and offered a possible information channel for the vaccination information and agreed that more than 80% of people are using mobile phones and they can receive SMS messages.

Some initial concerns and problems were highlighted by the officials who took part in the interview, problems of lack of skills and knowledge about new technology such as the internet/computer makes SMS messages popular to reach the parents who needed vaccination for their children.

There was significant discussion on receiving the actual SMS messages, and the response from most recipients were very positive. The parents confirmed that they themselves, their children, friends, relatives and colleagues at work did receive the SMS messages. They hoped that the LMH will keep using the same media to inform or prompt the public for other purposes. They further confirmed that this timely information really helped them having the vaccinations done for their children within the desired time. They appreciated this process by saying that it is a new phenomenon which has never happened before. Only one parent said that the vaccination message was broadcasted on the TV. Though others said that members of their family did see the information through the TV, however they agreed that the SMS messages reminded them of the exact time, besides hearing it from other people in the community.

The clinic staffs confirmed that they saw recipients forwarding the message to others. Assuming they might not have received the message for some reasons. At the social gathering "vaccination SMS's" was a hot topic of discussions. This helped the message to reach to almost everyone.

The more people you affect, the more likely it is that your actions will impact on people who have power and influence over your project. These people could be strong supporters of your work - or they could block it (Freeman, 1999). The team at LMH used social network because they knew it is suitable regarding to Libyan culture to support their target which is disseminating information about vaccinations to individual parent to vaccinate their children (See Figure 8).

Social Network Model (SNM) is the map that identified the nodes, relationships and stream between people, groups and organisations. SNM as shown in the vaccination case study is the most important network which is mostly use when one needs to introduce new innovation which contributes to the TM notably in suitable theory for e-Government services. Managers use this method in their business when new technologies and tools such as computers, TVs, Internet and Mobil phones are introduce in production and delivery of services to customers. From interviews conducted in Libya as mentioned (Section 5.4.2) has shown that the team of NCFCTD have using SMS messages to deliver services through social network (See Figure 18).

6.3.1 Social Network Model

In the (Figure 18) the nodes in the network are the people and groups while the links show relationships or flows of information and knowledge between the nodes.

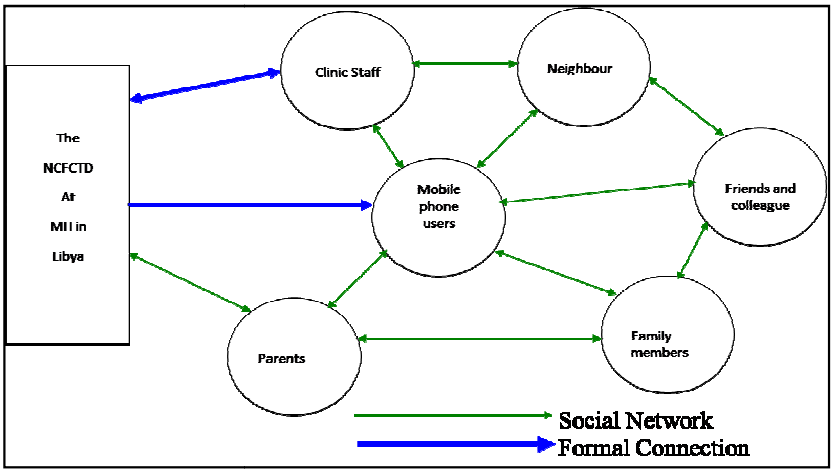

Figure 18: Social Network Model for Stakeholders

In (Table 10) contains a list of some of the stakeholders groups who were interviewed at the NCFCTD at LMH. In addition, the results of the interviews will be covered in the next section.

Table 10 List of Stakeholders and Their Referencing 1

N	Stakeholders	Reference
1	Director of The NCFCTD at LMH.	NC1
2	Member of The NCFCTD at LMH.	NC2
3	The head of media section at The NCFCTD.	NC3
4	Parents	P1
5	Parents	P2
6	Parents	P3
7	Parents	P4
8	Clinic's staff	CS1
9	Clinic's staff	CS2

6.3.2 Results from the Case Study with respect to e-Government Services challenges

This section shows the main points of the responses from the interviews with key stakeholders in the vaccination programme. Several themes emerged from the interviews, one of which was the problems faced in disseminating information about vaccinations to families:

6.4 Benghazi Blind Association (BBA)

This section provides a case study that describes an organisation in Benghazi one of the cities in Libya as shown in (Figure 1) that delivers courses on computer and Internet usage to individuals with visual impairment. This case study demonstrates the limitless opportunity

that the internet provides to individuals of all walks of life, and suggests some of the innovative ways that government can harness this tool for the betterment of its citizens.

Many response received from the North Eastern region of Libya where both the online and paper based survey were conducted indicated that people from this region are more aware about e-Government services, computers and internet usage than other areas. One of the best cases which accounted for the high awareness rate of ICT in this region was a Benghazi blind association which consists of a computer centre for blind people.

Information and communication technology is becoming an exciting tool for numerous organisations and individuals in Libya. The Internet represents both a basic communication tool and a fundamental means of improving lives. Searching on the website, sending e-mails, chatting online, shopping online, and computer education are all potential uses of the internet that are applicable to all classes of society in Libya.

The idea of computer classes for blind individuals has been common around the world, but the first individual from Libya to apply the idea was Omar Al-basbas. His aspirations and goal to become a computer expert and the limited opportunity to achieve his goals in Libya, led Omar Al-basbas to travel to the UK and Switzerland where he successfully obtained BA in English and MSc in computer science respectively.

Omar Al-basbas returned to Libya after his education in Europe to establish Benghazi blind association and a computer and internet centre which deliver courses to his blind colleagues/association members in Benghazi. Once more, this is another example where education uses social networks, a sense of responsibility to create and/or improve awareness of ICT in Libya.

The specific idea of teaching computer lesson at the Benghazi blind association came from one of its members – Omer Abdalaziz – who challenged the culture in and educational system in Libya which often oblige blind individuals to study very specific subjects. Omer Abdalaziz saw that blind individuals in Libya could study all different sorts of subjects as their counterparts in the developed world when given the chance. In fact, there are no facilities that support blind people to study different courses apart from language at the

Libyan University. He made this comment after he had the chance to use one computer programme for the blind, called VISIO, which depended only on the use of sound and began to identify the potential applications of the programme in Libya.

The software developer expanded VISIO in 2002, offering the programme in numerous languages. However, Arabic was not offered. Noting this deficiency, Abdalziz began to form his own company to offer Arabic-translated computer programmes for the blind people. He and his associates met with representatives from the Baum Company, another firm that specialised in creating software for the blind, named VIRGO. After negotiations, Baum agreed to co-operate with Abdalziz and his colleagues, to create an Arabic-translated software programme for the blind.

He encountered the trouble with adapting the programme for Braille printing. Based on this Abdalaziz went to Sweden to meet the Index Company, which produced the Index Braille printing. Unfortunately, Index did not offer an Arabic printer; however, like before, Abdalaziz and his colleagues offered their services and adapted standard printers to work in Arabic. The price of the Arabic Index printer is about $11,000, and can successfully print pictures in colour (which is differentiated by the deepness of the points of Braille).

Ultimately, Abdalaziz's new software package is going to be named COBARA, and will be compatible with Windows Vista. However, some software and devices are already available to blind and visually-impaired people include; VIRGO is the latest programme from Visio-tech, the Arabic translation which is known as AL-ROWYA. These devices are aimed at reducing barriers in public areas for blind and visually-impaired people, and to improve their quality of life.

Based on his knowledge and values of computer education Abdalaziz designed courses to educate blind individuals and to teach them how to use these technologies. Beginning in 2005, students took courses in basics computer usage – how to use the basic functions of a computer, such as starting, log in, using the keyboard and printing documents. Though these courses were very basic, they were the beginning of more sophisticated offerings. As at March 2006, the courses have expanded to covering internet usage.

Currently, the school offers one week course on computer basics, one week course on Microsoft Word (showing how to type and use the normal keyboard, which is used for all the courses). The school also offers one week course on Internet usage, which is divided into three parts: how to search, how to download and save files, and how to use e-mail and chat with their peers all over the world.

These courses are designed and implemented entirely by the Benghazi association of the blind. They are taught by highly-educated staff with master's degrees and PhDs. The government provides some of the lab machines for the courses, but the majority of funding for the programme comes from the association itself, which has its own budget. In Libya, software, printers, and portable computers are very expensive, so the government was reluctant to support the project. The association's ability to continue paying for the project despite enormous costs shows not only to the Association's dedication to the programme, but also to the tremendous promise that so many people place in it.

A committee announces, arranges, and enrols individuals into the classes. As the word spread about the classes, an increasingly number of individuals wanted to be enrolled. Now, blind people from all over Libya have applied for the classes'. The number of computers has expanded to accommodate the surge in demand (Table 11) demonstrates the sale and usage of the association's technologies and service.

Table 11 Technology Used by the Benghazi Blind Association

N.	The Virgo Software from Visio Technology of Libya began in 2001.	The IBSAR Software from SAKHER Egypt Company
1.	It has 3 technology involved in this software: Braille display (electronic line) developed by Germany(the hardware) brand BAUM this is responsible to translate words from the screen to the electronic line (Braille display).And this is what the Libyan engineer in Emirate branch did for the Arabic translation. Sound technology and magnifier the display screen	It has only sound technology involved
2.	They used version (4.5) and now the updating which are (4.6).	They used version(5) and now the latest is version (6)
3.	Prices for only sound package is $2000 for the whole 3 packages between $6000 and $7000 before 2007 the price were between $10.000 and $11.000	Nearly $1000 in 2007 before 2007 was little expansive

4.	This software come to the Benghazi association of the blind End of 2004	This software the old version of it came in 2002 to LIBYA

The Association contacted local, national, and international organisations for assistance on teaching methods and curriculum development. According to observers, the programme has been a great success. The students reported that the design and content of the course are intuitive, and especially helpful for their academic studies. Some experience difficulties at the beginning of the course – however, many believed that these difficulties were largely psychological (a fear of the unknown). In most cases, after a day or two many students overcome these initial challenges. The only complaint from the students is that the courses lasted shorter than expected. However, the demand for the courses has outstripped the organisation's ability to provide longer interaction with all students.

The success of this programme reinforces the need for the Libyan government's assistance to individuals' initiatives on e-projects. The demand is there – it just requires a level of innovation and entrepreneurship. The BBA initiative has improved the lives of visually-impaired people in Libya. The government should therefore harness and learn from this private innovation such as BBA to implement successful e-Government services project.

6.5 Summary of the Libya Case Studies

As discussed above, someone who has higher education in computer science established internet café in his village to introduce the local people to knowledge and skills in new technologies including computers/internet. This has improved the access to e-Government information and activities in the village as young people who are engaged with the technology accessed information from government website and then pass it on to their families. Truly, most trainees and service users who were interrogated were very positive about the initiative.

Another interesting thing learned from the Alhraba case study is that education, particularly, sending people to study broad could have significant positive impact on Libyan economy as most foreign educated people (Alhraba case, BBA case, LMH team) seems to take social responsibility to initiate projects and share their knowledge to help the development of the country and improvement of the general standard of living.

Based on the Alhraba case study it is quite clear that the availability of internet/computer has the potential to reduce the distance among remote villages, towns and cities and bring the people close to governance.

One of the good examples that could lead to effective implementation of e-Government services identified by the respondents was the NCFCTD at LMH in Libya and their use of SMS messaging to inform parents of a vaccination programme. The findings of the case study suggest another channel from which the government can deliver effective e-Government services to the people. The case study is a good example in both the delivery of the information in the form of SMS messages and in asking people to pass on the information to families within their community. The SMS message approach proved very successful in reaching a large proportion of the population in an efficient and effective way.

Interestingly, the social network aspects also proved to be very successful in that it developed social cohesion and social responsibility in disseminating vaccination information. There was a win-win situation for each of the stakeholders: the vaccination clinics were able to provide vaccinations to the vast majority of children; the parents and families and many children were vaccinated. Passing on information by the people promoted the activity and broadly increased involvement of the community. The company providing the service also achieved successful vaccination and promoted social cohesion. The cost of sending a simple message or passing on the information to those that may need it might be minimal, yet the payoff is immense. Similar outcomes may be achievable with the effective implementation of e-Government services related projects. It seems likely that there would be widespread support from the different stakeholder groups.

A social network review of e-Government services activity is particularly important for Libya when initiating projects. Where there is lack of technological and physical infrastructure, social network should be used. Interestingly, lessons from this example may also provide some clues on the way forward to increase awareness and participation of people towards e-Government services. Overcoming the challenges that faces e-Government service implementation in general and in Libya in particular, requires this kind of innovation and entrepreneurship.

In sum the three case studies seem to provide real answers to the primary, secondary challenges and suitable theories identified in the (Chapter Four). It also provides strategies that may facilitate the effective implementation of e-Government services in Libya. Again it is on the strength of these findings that a theoretical model is formulated, details of which will be discussed in the next chapter.

CHAPTER 7

PROPOSED APPROACH FOR THE SMOOTH IMPLEMENTATION OF E-GOVERNMENT SERVICES IN LIBYA

"E-Government success and failure therefore depends on the size of gap that exists between 'current realities' and 'design of the e-government project' " Richard Heeks, (2003).

7.1 Introduction

This chapter focus on the proposed approach to deal with the main challenges of e-government services in Libya. The researcher conducted a thorough review of literature on the research question (Section 1.5.1) with respect to e-government services. This was followed with field studies using online and paper-based surveys as well as interviews and case studies to deepen an understanding of the various potential challenges identified during the literature review. The combination of the studies helped the researcher to come up with a proposed Theoretical Model (TM) that may be appropriate for the effective implementation of e-government services in Libya. The chapter is divided into five sections outlining the outcomes of literature review, online-based, paper-based surveys, interviews and case studies. This is also followed by the proposed TM which has been piloted for its effectives.

7.2 Outcomes of Literature Review

Literature review outcomes are divided into three main sections as follows:

- Primary challenges;
- Secondary challenges;
- The suitable theories for the smooth transformation toward successful e-government services project in Libya.

7.2.1 Outcome from Primary Challenges

Table 12 illustrates the primary challenges identified by literature review. Some of the researchers who have identified these challenges have given next to the five challenges in the column of references (Table 12).

Table 12 Primary Challenges were identified as Long Term plan

The five challenges	References
People awareness	(West, 2004). (Fitzgerald, 2005). (Janet, 2004). (Milne, 2006). (Riley, 2003). (Abdulrazzaq et al., 2003a). (Charbaji and Mikdashi, 2003). (Mofleh and Wanous, 2008). (Mikdashi, 2003). (Heeks and Bailur, 2006). (Abanumy et al., 2005). (Hossan et al., 2007). (Lau, 2004) (Ke and Wei, 2004). (Silcock, 2001). (Kawalek et al., 2003).
Trust	(West, 2004). (Fitzgerald, 2005). (Milne, 2006). (Tsekos, 2005). (Warkentin et al., 2002a). (Hazlett and Hill, 2003a). (Teltzrow and Kobsa, 2004).(Abie et al., 2004). (Jaeger and Thompson, 2004). (Tolbert and Mossberger, ND). (Warkentin et al., 2002b)
Technical challenges	(Abdulmohsen, 2005). (Fitzgerald, 2005). (Hart, 2005). (Janet, 2004). (Tsekos, 2005). (Veenstra, 2005).
Change culture	(Abdulmohsen, 2005a). (World, 2002). (Devadoss et al., 2003a). (Ke and Wei, 2004). (Jaeger and Thompson, 2003) (Warkentin et al., 2002c). (Chen et al., 2006). (Silcock, 2001).
Participation	(Moen, 1994). (Darrell, 6). (Hart, 2005). (World, 2003). (Eyob, 2004). and (Dugdale et al., 2005a). (Dugdale et al., 2005b). (Damodaran, 2005) (Sharma, 2004a). (Irani et al., 2007a). (Komito, 2005). (Irani et al., 2007b).

From the study conducted about e-government services in the EU countries confirmed that there is a lack of people participation in e-government services McCaffrey, (2003); Esteves; Garot, (2006) and Irani et al., (2007). The question emerged here that if there is lack of people participation in EU countries where the level of education (awareness), familiarity of usage of new technologies, appropriate infrastructure and trust of governments seem to be higher as compared to Libya; then how difficult it would be to implement e-government services in Libya. This led to the research question '(*What are the main factors that may contribute to successful implementation of e-Government services in Libya?*).

The primary challenges identified in (Table 12) for example awareness, culture, and participation may involve behavioural changes and capital which may take a long time to yield the expected results. With respect to the immediate needs of Libyan people and global competition the Libyan government has to show the commitment with regards to e-government services implementation. Hence, a short term plan is needed which is discussed in the following section.

Quinn, (2002) suggested that the government needs long term (See Table 12) and short term plans (Table 13 and Figure 19). In addition, suitable theories (See Section 7.2.3) are required for the smooth implementation of e-government services in Libya.

7.2.2 Outcomes from Secondary Challenges

From the literature review the following elements were identified to be considered as a short term plan illustrated in the Table 13 and Figure 19.

Table 13 illustrates some of the researchers who have identified secondary challenges have given next to the seven challenges in the column of references.

Table 63 Secondary Challenges were identified as Short Term Plan

S. No.	The Seventh Elements	References
1.	Assess Needs and Readiness to Change.	(Heeks, 2003). (Bourantas, 2007). (Magee, 1998). (Basu, 2004a). (Lee et al., 2005). (Gupta et al., 1997). (Jones et al., 2004). (Pentland et al., 2004). (DiMaggio et al., 2001). (Abdulmohsen, 2005). (Bhatnagar, 2004a).
2.	Provide roadmap and Set e-government Direction.	(Jones et al., 2004). (Heeks, 2003). (Heeks, 2002c). (Weerakkody and Dwivedi, ND). (Gupta et al., 1997). (Jones et al., 2004). (Aggarwal, 2001). (Gupta and Govindarajan, 1984). (Wimmer et al., 2007). (Nunes et al., 2002). (Bicking et al., 2006).
3.	Partnership with Private Sector.	(Heeks, 2003). (Savas, 2000). (Heeks, 2002c). (Sherwood, 1990). (Aucoin, 1990). (Feltz et al., 2004).
4.	Plan the Change to e-government.	(Heeks, 2003). (Anthopouls, 2005). (Becker et al., 2003). (Heeks, 2002c). (Haitjema, ND). (Centeno et al., 2004). (Germanakos et al., 2005).
5.	Overcome Resistance to Change.	(Heeks, 2002c). (Ndou, 2004a). (Gilbert et al., 2004a). (Yigitcanlar and Brisbane, 2003). (Greenberg, ND). (Heeks, 2003). (Ciborra and Navarra, 2005b).
6.	Improve Citizens Participation.	(Savas, 2000). (Fang, 2002). (Heeks, 2002c). (Elliman et al., 2007). (Alexander, ND). (Lowery and Director, 2001). (Arnstein, 1969). (Tat-Kei Ho, 2002).
7.	Evaluate Performance and Communicate Progress.	(Clarkson, 1995). (Heeks, 2002c). (Hazlett and Hill, 2003b). (Evangelidis et al., 2002). (Jones et al., 2004). (Benchmark, 2007). (Heeks, 2006b). (Team, 2000). (Goetzel et al., 2001).

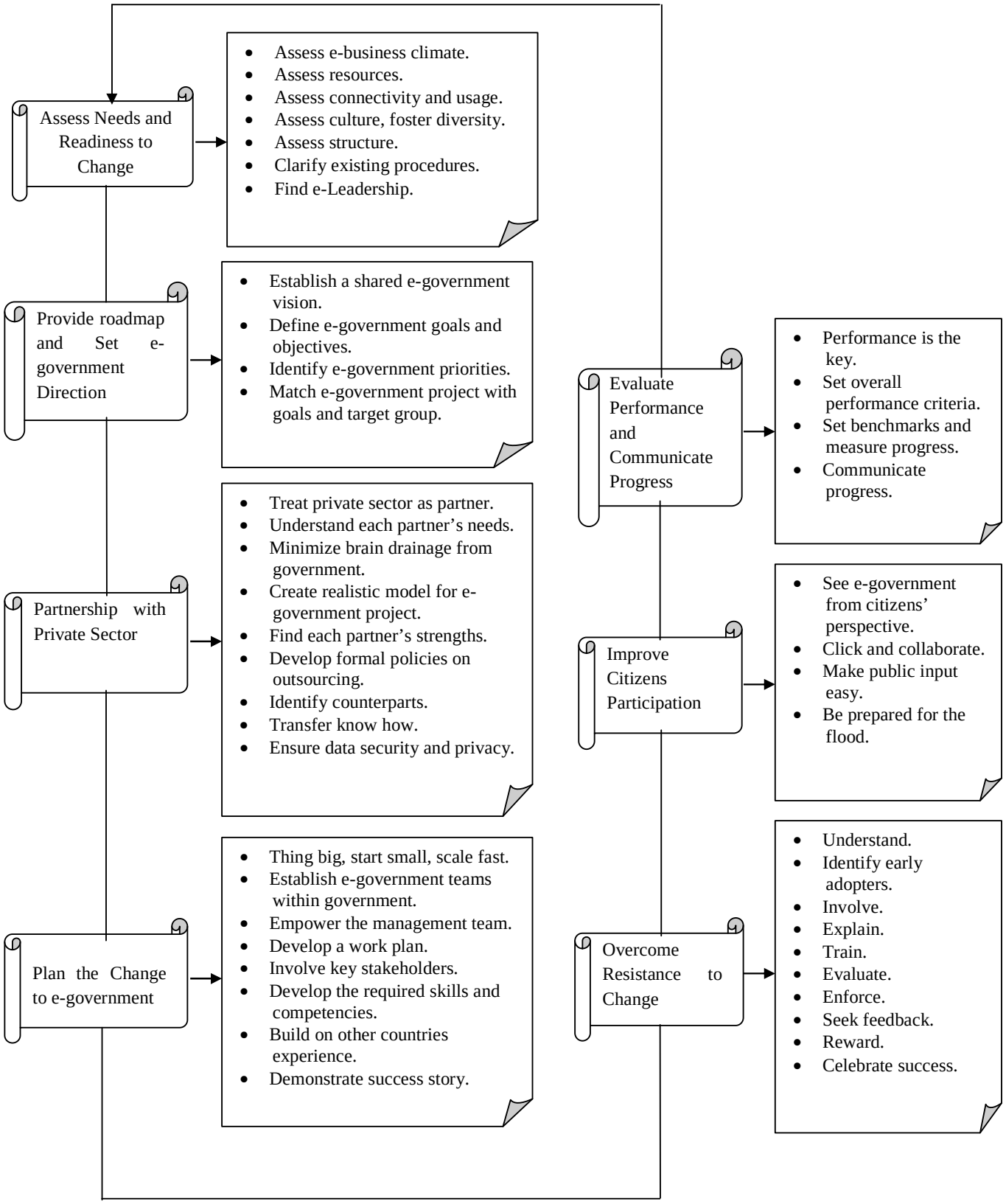

Figure 19: Shows Elements of the Short Term Plan for E-government Services in Libya

In order to ensure successful e-Government services implementation in Libya, the government must determine the factors that have the greatest effect of its implementation. This requires consideration of the factors that influence and shape the implementation and how they are unique to Libya. Freeman (1984) said “stakeholders that have influences on legislation and policy of a country can support or block the project”. Against this backdrop it is important that the Libyan government involves and consult stakeholders to ensure the smooth transformation of e-government service project. Consequently, the researcher identified suitable theories mentioned in below section that could be used to deal with the potential obstacles that may arise in the implementation process.

7.2.3 The Suitable Theory for e-Government Services in Libya

For the long time philosophers, researchers, and academics have detailed numerous theories that explain the nature of government. Of these countless theories, two are especially noteworthy for our discussion Baker, (1972) which are identified and explained in the Chapter Four. The stakeholder theory (ST) Freeman, (1984) and network theory (NT) Lin, (2001) are relevant to deal with the unique problems in Libya towards the successful implementation of e-government services. For example, the two theories have the potential to spell out who are the key players that can support or block the project (the interest groups) and how the relationship among them may help the government to cope with the potential obstacles that could arise in the project implementation Freeman, (1984).

Figure 20 illustrates the suitable theories that may help Libyan Government to implement effective e-government services project.

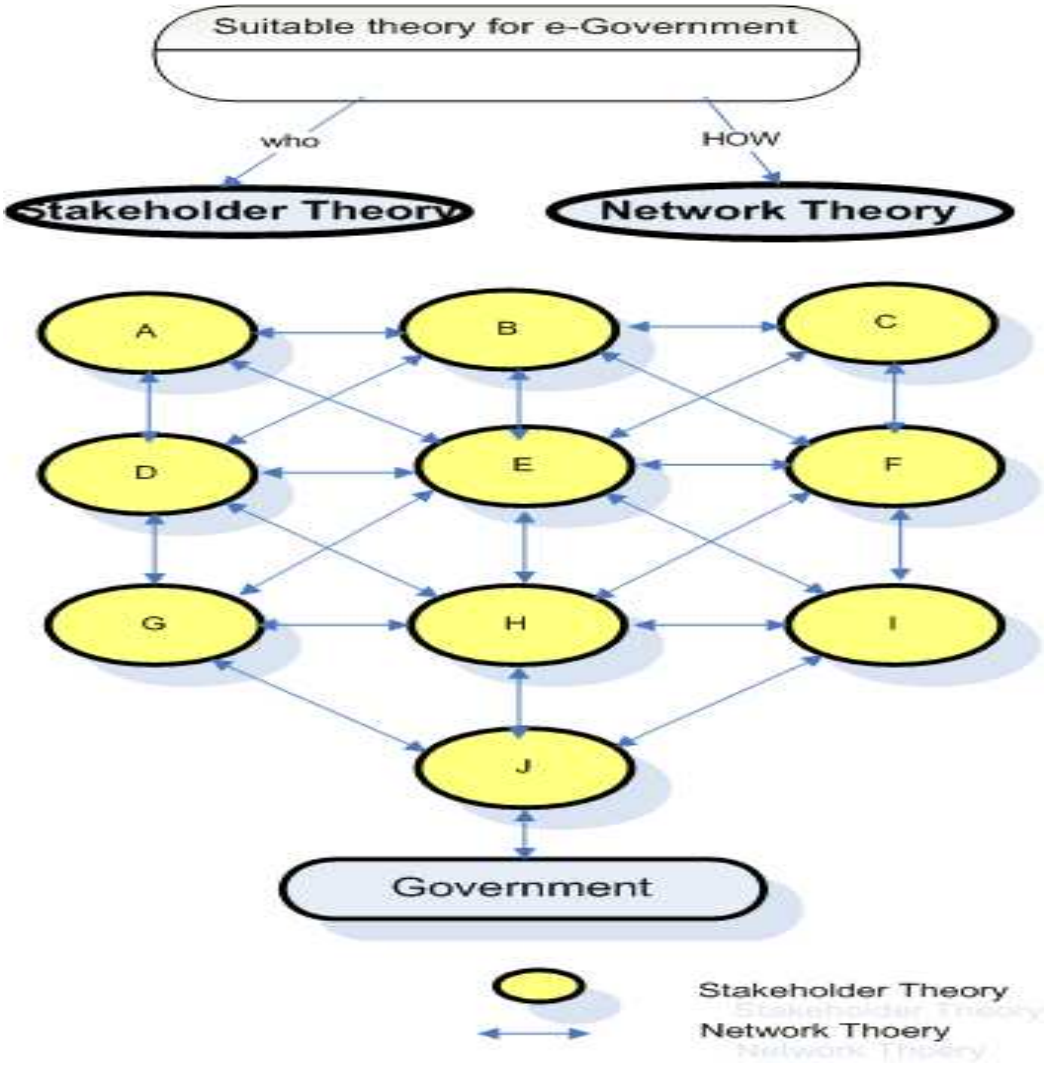

Figure 20: Suitable Theory for E-government services in Libya

7.3 Outcomes from Primary Survey

Following the literature review some field studies were conducted to ascertain the understanding of the challenges in the implementation of successful e-government project in Libya which are explained in detail in the (Chapters Four and Five).

In sum it has been identified that:

- Education may have positive impact on creating people awareness (knowledge on e-government services and skills of internet/computer).
- Cultural challenges may put certain people in disadvantage position with respect to the use of internet/computer and e-government services.

- Lack of infrastructure of technologies (internet/computer) access does not exist in most places such as home, work and educational institutions and there is no telecentre (internet café run by government body) in Libya.
- Respondents' Lack of trust on government.
- Participation was identified as critical success factor.

Table 14 illustrates the finding from the literature survey and primary survey data. Also, this shows the relationship between them.

Table 74 The Relationship between Outcomes from Primary Data and Literature Review

Outcomes of the Primary Survey data	**Three Main Themes Outcomes of Literature Review which are:**		
	Primary challenges	*Secondary challenges*	*Suitable theories*
Lack of infrastructure of technologies, No postal network, dispersed cities over large areas. Usage of internet and computers are very few.	technical challenges,	Assess e-business climate, resources and structure. Assess connectivity and usage.	
People using multi TVs channels. Involving people is prerequisite. There is a lack of Internet and computer literacy, people are not prepared well to use technologies and availability of internet is finite and slow.	Lack of people awareness and participation. Change culture,	Understand each partners needs, find each partners strengths and weakness, assess culture, foster diversity. Clarify existing procedures. Identify e-Government services priorities. Involve key stakeholders. "Assess needs and readiness to change" such as Assess e-business climate, resources and structure.	Who is the stakeholder?

No other partner to corporate with, Unfamiliarity with technology, Mistrust of technologies and government fear that the technology will make them lose their jobs.	Lack of people awareness, technical challenges and change culture.	"Improve citizens participation" such as See e-Government services from citizens' perspective, click and establish e-leadership. Collaborate and make public input easy. develop the required skills and competencies, build on other countries experience and demonstrate success story.	relationship among stakeholders "network"
People are familiar with Mobile phones, using social network led to increased participation	Change culture and create and/or improve people's Trust.	develop a work plan, "Improve Citizens partnership" understand each partner's needs, match e-Government services project with goals and target group, involve, explain, train, evaluate, see feedback, reward, celebrate success and enforce. Find each partner's strengths, thing big start small scale fast, demonstrate success story.	Identify and involve the key players in other partners who have the most influences on legislations and policies on those organisations. Stakeholders and network theories.

As seen in the Table 14, the challenges stated in the literature review have also been confirmed by the primary data.

7.4 Proposed Theoretical Model for Libyan e-Government Services

"Putting these dimensions together with the notion of gaps produces the model for understanding success and failure of e-government" Heeks, (2002). In addition, Booz and Hamilton (2001a) suggests that "e-Government maturity model helps organisations base-line their e-government readiness, develop a strategic approach, and then move through a course of action tailored to specific requirements". Moreover, Becker et al. (2006) said that "To provide guidelines in the form of a procedural model for e-government-indicated business process reengineering (BPR) projects in public administrations should take into account".

Based on the earlier findings from the secondary and primary survey data indicated that the difficulty regarding implementation of e-Government service is to determine why, when, and how to implement successful e-government services project in Libya. However, few of the previous researchers mentioned in the (Chapter Two), Table 1 have examined some of the challenges, although, not specifically related to Libya with respect to e-government services. The researcher collated the previous work, results of survey findings and applied the salient elements to the specific needs of Libya which led to the proposed Theoretical Model (TM) for successful implementation of e-Government services (See Figure 21). Thus, the TM may work particularly in Libya or/and other developing countries with similar challenges.

7.5 Piloting of Theoretical Model (TM)

As has been said earlier in this chapter and in the previous chapters, the TM is the outcome of the literature review and the findings from various field studies. The TM have been subjected to a pilot test to ensure its reliability and efficacy to deal with the unique potential challenges that may face Libya in her quest to implement e-government services across the country. The TM was piloted in the Gharian Local Government Authority. The Gharian Local Authority is one of the districts in Libya. The Authority had plans of networking all its Sub-Districts and therefore piloting the TM in the districts served as a great step in the right direction and welcome news for the researcher and the district as well. The TM was subjected to the pilot process for a period of four (4) months where the researcher and the people involved closely monitored progress, weaknesses and strengths of the framework.

During and after the piloting some weaknesses and strengths of the TM emerged which led to some amendments. It was confirmed during the piloting period that awareness creation, trust, traditional, cultural and religious practices may militate against the smooth implementation of e-government services, examples of such practices are the male dominated social life of Libyans and the porosity of citizens' trust of their government. Against this background the researcher made some changes and laid more emphasis on the challenges that emerged out of the pilot. Among the modifications that were made include the following:

During the pilot it emerged that the private sector has the potential to become the engine of economic growth in the Libyan economy and for that matter may largely use the services provided by e-government. In addition, it was revealed that the government's decentralisation programme which has led to the creation of local authorities calls for a greater patronage of e-government services in Libya. Against this background some modifications were made to the TM. For instance, greater emphasis was placed on partnership with the private sector and local authorities in Libya. The private sector partnership have the potential benefit of increasing citizens participation and awareness of the e-government services, it may further increase citizens ownership and commitment to the e-government project.

The pilot period also confirmed that in-depth education is of necessity if the e-government project was going to succeed. It was therefore important to include training as one of the elements for the short term strategy to move the project forward. Again piloting the TM also brought to the fore the need to increase strategies that could lead to information flow, effective communication channels and a feedback system, all these were fully taken cognisance of in the TM as a result of the pilot exercise.

7.6 Overview and Perceived Advantages of TM

The transformation from traditional government to e-government services is complex, touching the political, cultural, organisational, and technical aspects of government and other public sector providers Chen, (2001); Gant, (2001)**;** Banerjee and Chau, (2004). This transformation is pressured from the bottom-up, as the expectations of citizens and businesses increase, as well as from the top down, as governments seek to reform and modernise their organisations Aucoin, (1990). Changing the way government works complicate the transformation process and produces a set of overlapping priorities and programmes.

Like all complicated reforms, simply drafting a law or issuing an order cannot successfully implement a e-government services Al-Omari, (2006); Strejcek and Theil, (2003) . It requires change how government and business officials think and act, how they view their jobs, and how they share information between departments (G2G), with businesses (G2B), and with citizens (G2C) Sweisi and Adams, (2006). It requires re-engineering the government's business processes, both within individual ministries and agencies and across governments Sweisi and Adams, (2007)). At the same time, e-government services should respond to changes in the internal and external environment. Indeed, how a society, its citizens, and businesses deal with government and with information is changing radically all over the world.

The proposed theoretical model which is the goal of this study, builds on the experiences of other countries and field studies. This TM developed with some adjustments to accommodate the specific needs of e-government services in Libya and the process of overcoming shortcomings. As explained in the Chapter Four, the main theme in transforming to e-government services is to change in the process of delivery government services. The TM focus on proposing general guidelines to manage the change during the preparation, formulation, implementation, and evaluation phases.

7.7 Using the Theoretical Model (TM)

According to Heeks (2002) "Central to e-government success and failure is the amount of change between the current realities of the situation and the model or conceptions and assumptions built into the project's design". The researcher identified the current realities from the secondary data and evaluated by field study and came up with the TM.

Using the TM the implementers' of e-government services in Libya should conduct initial assessment and feasibility studies based on the elements identified in the TM which are: primary and secondary challenges as well as the suitable theories which are explained in the Section 7.2.

The main advantages of the TM include, but are not limited to, the following:

1. Enable government to adapt to the changes in the external environment and identify the pressing needs of government customers Wimmer, (2002a); Newton and Norris, (2000) (citizens, businesses, inter-government users and other partners) that enable government to provide demand-driven services Worrall et al., (1998).
2. Assess the readiness and internal capacity of government to make the transformation online to be more customer-centred Watson and Reigeluth, (2008).
3. Help government draw the roadmap and move the whole government organisation in the required direction to achieve its intended goals and objectives Grant and Chau, (2006); Pfeffer and Salancik, (2003).
4. Align and pool government and private sector resources and capacities to create the required synergy and enable the transformation to e-government services by encouraging public-private-partnership Andersen, (2004).
5. Streamline and manage the transformation to e-government services by ensuring the effective management and deployment of government resources and intangible assets Asoh et al., (2002).
6. Ensure the smooth transformation to e-government services and the acceptance of government's employees to change the way they work and deliver services to customers by managing and overcoming resistance to change Bray and Konsynski, (ND).
7. Strengthen the relationship between government and its society by encouraging and improving citizens' participation in the transformation process Newton and Norris, (2000).
8. Enable government at any stage to evaluate to what degree it is achieving its intended goals and objectives in the light of the shared e-government services vision and communicate progress to maintain the implementation momentum Kunstelj, (2004) and Kaylor et al., (2001).

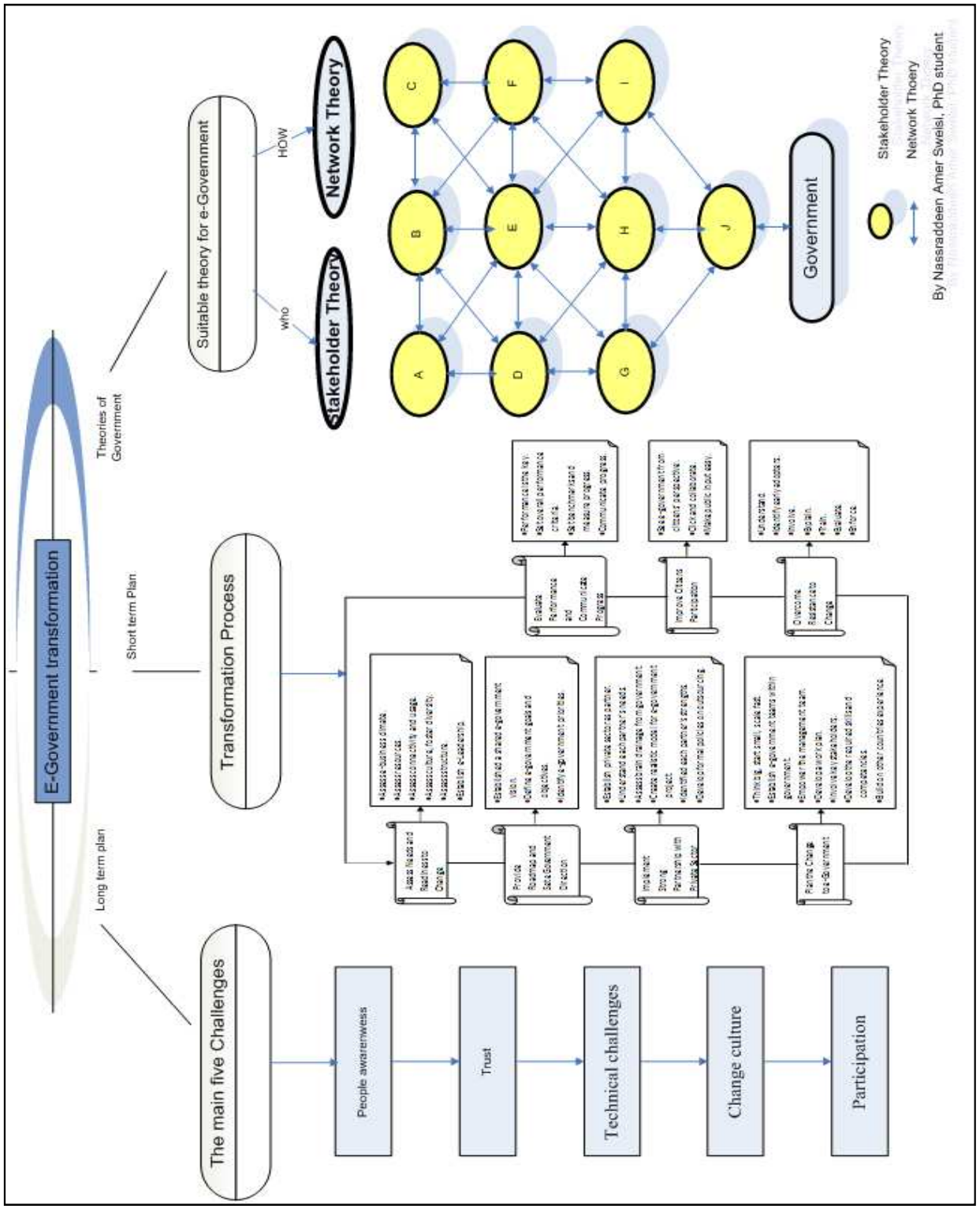

Figure 21: Proposed Theoretical Model for E-Government Services Implementation in Libya.

7.8 Summary

This chapter proposes a Theoretical Model (TM) to manage the complexities associated with the implementation of e-Government services in Libya. The TM builds on other countries' experiences from the literature review and results from the primary surveys. Generally there are challenges and problems in implementing e-Government services projects; however, the TM is designed to cope with the challenges that seem to be pronounced in Libya.

The effective management of challenges seem to distinguish most successful e-governments services projects from others. As identified in the literature review, policy makers are challenged to develop the tools that will measure, manage, and positively influence the obstacles identified in this study as they contribute increasingly to the value of the services they deliver to citizens and businesses.

In conclusion the TM provides guidelines and better understanding to manage the change during the preparation, formulation, implementation, and evaluation phases of e-government services project in Libya. The model also highlights the potential challenges identified in the literature review and the field studies and offer suggestions to deal with the particular problem. The TM has provided a stronger link between the field studies and the detailed literature review to suggest a way out of the various challenges that may face Libya during the planning and implementation stages of e-government services. Again the TM seems to provide answers to the research questions set in chapter one of this thesis and for that matter attempts to fill the knowledge gap identified during the studies, for instance the unique challenges of Libya which seems to be missing from earlier research work.

CHAPTER 8
DISCUSSION

8.1 Introduction

This study set out to answer the research question mentioned in the Chapter one is "What are the main factors that may contribute to successful implementation of e-Government services in Libya"? In order to answer the research question the following four key objectives were identified:

- To identify the main challenges faced by governments in developing nations like Libya with respect to adopting e-Government services.
- To focus on create or/and improve the awareness of e-Government services in Libya in order to better understand how a successful e-Government services program would be designed, developed, and implemented.
- To develop suitable guidelines to investigate and describe e-Government services adoption and awareness in Libya.
- Design a step-by-step strategic plan for the transformation of the traditional system of governance to an e-Government services system of governance in Libya.

Freeman (1984) proposed that government have to involve pertinent interest groups in the vision for change, such as, implementing e-government services. Further on, he argued that such interest groups can either support or block any proposed institutional changes. Against this backdrop the researcher came up with the hypotheses:

Those stakeholders might resist the change from traditional government services to e-government because; the general population of Libya seems to know very little about ICTs. Their influence will not be enough to help implement an e-Government services project. Some government officials might fear that they will lose their jobs due to an e-Government services initiative. Information sharing may be seen as a barrier in Libya where everything related to government seems to be treated as secret (For detail see Chapter one).

This chapter will discuss the similarities, differences and important findings from the study. It will also consider the emerging and complex trends from the findings and how they attempt to answer the above research question. In addition, discuss unique challenges that may face Libya in its attempt to implement e-government services.

It will then proceed to discuss on the hypothesis set out in (Chapter One) with respect from the findings from literature reviewed and field studies. Again there will be a discussion on the researchers approach to deal with the potential challenges. Furthermore, review what the thesis set out to achieve and whether this has been achieved. It will then proceed to reflect what should have been done differently. Finally the next chapter will attempt to make definitive conclusion on how Libya can successfully implement e-government services.

8.2 Emerging Themes

Analysis and findings from the literature reviewed and field studies conducted points to a number of emerging themes. The findings established that Libya could benefit from e-government services. Some of the benefits may include increased transparency in governance, ability of the government to reach underserved communities at a relatively cheaper cost and eventually leading to economic growth and development. On the other hand it is also established that Libya may face both long and short term challenges which in this study are described as primary and secondary challenges respectively.

Findings from the field studies confirmed earlier findings from the literature review in Chapter four that Libya lacks the relevant technological infrastructure that supports e-government services in the form of internet and computers and it may require a huge capital and commitment of government to implement e-government services. On the issue of awareness and participation it is revealed that already there are some Libyans who use internet/computer. However, internet provision at the time of this study was limited to internet cafes. Only few individuals have access to internet at home probably due to the high cost of subscription.

From interviews and online survey conducted it was established that the current government WebPages **(**See Appendix D**)** provide only information rather than needed services (See Chapter One for detail). A cross-section of respondents agreed that they are prepared to use e-government services if needed services are provided. Contrary to the hypotheses formulated earlier on it was established that e-government services will enhance efficiency rather than job losses. Nonetheless, the findings seem to support the hypotheses that information ownership and sharing are treated as secret more especially if it is related to

the government. On the issue of resistance to change and participation it was clearly established from the findings and confirmed by the literature review that Libyans are prepared to embrace and participate in e-government services. However, like any change it was found out that there could be pocket of resistance to the transforming process and as Freeman (1984) said, it is important that policy makers involve all stakeholders in the policy formulation, design and implementation of e-government services in Libya.

The case study on Benghazi Blind Association (BBA) (see Chapter six) confirms that there is lack of technological infrastructure designed for use by people with learning difficulties. However as a fundamental right of education it is important that provision is made for people with learning difficulties in the design and implementation of e-government services in Libya. The 'local champion' in the BBA attests to the importance of offering opportunities equally to both able and disabled in the society.

A common trend that also emerged from the field studies was that education could play an important role in implementing e-government services in Libya. For instance, case studies and interviews conducted point to the fact that existing users of internet/computer technology have had higher education either in Libya or from outside. This finding suggests that policy makers should keep into account formal education into their plans if they are going to achieve a successful implementation of e-government services in Libya. Equally important was the finding that for Libya to effectively implement e-government services, training of local people may play a crucial role. It was established that training local people may create a 'home-grown' pool of talents and skills that could manage and continuously improve the facility.

The findings also point to the fact that participation of women on new technologies might be limited**.** For instance, on both online and paper-based surveys the response rates of women were low as compared to their male counterparts. In the same vein the findings clearly indicated that farmers have little knowledge and skills about e-government services in Libya. On the existing internet/skills three stakeholders were surveyed; students, engineers and farmers, the result showed that engineers have advanced internet/computer skills as compared to students and farmers.

8.3 Unique Challenges That May Face Libya

This study attempts to find out about the factors that may contribute to the successful implementation of e-government services in Libya. In so doing literature on the research question were reviewed. Earlier research findings seem to focus on the generic challenges that may face e-government service implementation. The primary studies revealed factors that may contribute to the potential challenges of implementing e-government services in Libya.

The vastness of Libya with sparse population and long distances between and among cities, towns and villages suggests that technological infrastructural provision may take a long time to materialise (for more details see Chapter one). Again Libya has suffered trade, technological and economic embargo for nearly three decades. Therefore, the existing technological infrastructures at the time of this study were worn out. This peculiar finding again suggests that a complete overhaul of existing technological infrastructure is needed for the effective implementation of e-government services.

In addition, the interviewees at the time of collecting data revealed that higher education seems to support the awareness and usage of new technologies**.** The public and private sectors officials' culture seem to confirm the researcher's hypotheses that information ownership and sharing is unique in Libya as compared to other developed countries. On the other hand the findings established a social network system in Libya that has the potential of supporting the implementation of e-government services. This seems to be supported by the vaccination case study where SMS messages were sent through mobile phones. The case study points to the social network theory where the message was passed on to neighbours and relatives fairly quickly. It could be inferred from the study that mobile phone could be another innovative e-channel that e-government service can use to disseminate services to the Libyan people.

8.4 Researcher's Approach to Deal with Unique Challenges

Heeks, (2002) posited that *"e-Government success and failure depends on the size of gap that exists between current realities and design of the e-government project"*. Further on he suggested that policy makers contemplating to initiate e-government services should

conduct an assessment on the current situation and factor the existing gap in the design and implementation of e-government services.

In an attempt to deal with the challenges that may militate against successful implementation of e-government services in Libya, the previous chapters focused on series of surveys in the form of interviews, case studies, paper-based and online-based questionnaires. In addition, existing literature on e-government services and principles of strategic management were reviewed to be able to establish the current realities and gaps that exist with respect to the design and implementation of e-government services in Libya.

Against the backdrop of the reality check, (Chapter Seven**)** of this study is dedicated on building a Theoretical Model (TM) that could serve as roadmap to the effective implementation of e-government services in Libya. The model attempts to take into consideration the primary and secondary challenges along with suitable theories which suggest how those potential obstacles could be dealt with. However, as a social research the extent at which the TM on its own could help overcome the potential problems of Libya with respect to e-government services cannot be certain. It is worth noting that other factors both internal and external may work either favourably or otherwise on the roadmap.

In the view of the researcher it is equally important that policy makers and leaders demonstrate their unflinching support by making needed resources available for the project.

8.5 Direct Impact of Findings on Public Policy

The researcher was sponsored by the Libyan government to carry out this study and final findings may be implemented. This suggests that the results and recommendations from this study may have direct impact on public policy in one way or the other. In addition, the findings have contributed to knowledge on e-government services design and implementation particularly in countries that may have similar challenges like Libya. Seemingly the findings have the potential of bridging the knowledge gap identified in Chapter one of this study. Finally the findings could serve as a source of reference for further researchers in the area of e-government services design and implementation.

8.6 What Should Have Been Done Differently

The target population was some stakeholders in Libya with the aim of soliciting their opinions, beliefs and attitudes on successful implementation of e-government services as stated in Chapter two. Seemingly, it would have been an ideal situation to sample all stakeholders. However, the researcher was constrained by time and resources. Again, researchers including Becker, (1989) are of the view that in many cases a complete coverage of the target population might not be possible. Nonetheless, in future various stakeholders might be important to be able to include and consequently broaden the views, beliefs and opinions of the majority of the target population.

The researcher faced challenges in the strategies deployed to collect data more especially the paper-based strategy. The main challenge was with limit of time and money that will sponsor data collection. For example respondents' were given two weeks to return the completed questionnaire but it the researcher nearly two months to receive feedback from respondents. The researcher has been involved in this thesis only three stakeholders since the e-government for all population however if will do it differently all Libyan stakeholders will be involved to get more/different opinion to improve better e-government services. It is important that in future a different strategic approach of data collection may be needed to ensure timeliness. Piloting the TM helped in many ways to improve its potential effectiveness, it could have been even better if a longer period was devoted to the pilot programme and also in two or more different places to have a blend of opinions, challenges and opportunities. Again the scope of the research topic was too broad and covered a very large area; this posed a challenge to the researcher in data analysis and drawing of conclusions. In future it may be more convenient to limit the scope of the research topic on an aspect of e-government services and delve deep into it.

8.7 Summary

The primary and secondary data collected on this study points to the fact that e-government services have the potential of transforming traditional mode of governance. The findings from this research can confirm that e-government services can be cost effective, transparent and efficient. It is further reiterated that e-government services have the potential of contributing favourably to Libya's growth and development. In spite of all the potential benefits of e-government services, earlier research on the subject has been focusing on developed nations making it difficult to access literature on the topic with respect to

developing countries. Notwithstanding, the findings also revealed that countries like Libya could face potential challenges and obstacles in their pursuit of e-government services. Against this background this research has offered guidelines and strategic approaches that could help mitigate the potential challenges. It is worth mentioning that the strategic approach and guidelines may have to be combined with demonstrable commitment from all stakeholders in Libya.

Generally speaking the results of this study has offered two main contributions to knowledge in the area of e-government services design and implementation. Firstly, the theoretical model proposed a rethink in the subject area with regards to peculiar challenges that could face Libya and similar countries that may share the same characteristics. Secondly, the thesis could be seen as one of the pioneering research on e-government services design and implementation in Libya. Hence, could be a resource to future researchers in the area of e-government services.

In conclusion, this research may help developing countries like Libya to exploit the potential benefits of e-government services to transform the way they govern and facilitate the development of their economies. It can also be said that e-government services design and implementation have its obstacles and challenges. Different countries may have their own peculiar and unique challenges. Finally it is important for policy makers to refrain from assuming that there are generic e-government challenges for all nations.

CHAPTER 9

CONCLUSION, CONTRIBUTION AND RECOMMENDATIONS

9.1 Introduction

Governments in most countries aim to improve social services, access to key information and often promise to reduce waste, increase efficiency, dealing with corruption and further improve standard of living of their citizens. However, delivering these services in Libya faces significant problems and challenges. Some of the challenges can be resolved by the introduction of e-Government services but the introduction of e-Government services in Libya also faces significant obstacles.

The challenges to e-Government services reform are numerous and the path toward e-Government services is fraught with stumbling blocks, not just for Libya, but for countries all over the globe. These problems are exacerbated by the fact that government, in Libya, may not know the gravity and extent in which e-Government services can benefit the populace. This reality supports the notion that research needs to be conducted in order to provide governments' with sufficient information to successfully implement e-Government services and meet their goals and overcome their challenges. This study attempts to respond to this need. The study has been able to identify the primary and secondary challenges and consequently proposed theoretical model (TM) and suitable theories for the successful implementation of e-Government services in Libya.

E-Government implementation challenges can be technological; a country's infrastructure, economic problems can often derail e-Government services initiatives and lack of funding for implementation, and/or cultural problems. These challenges have been identified in chapter four and discussed fully in chapters five and six. This study provides substantial contributions to Libya's e-Government services initiative, as well as to the growing body of knowledge surrounding the topic area. It could further serve as a blueprint for Libyan government in particular to develop e-Government services based on proven principles and sound research.

This thesis also adds to the body of literature, framework and theories that best describe the promises of e-Government services in Libya. This chapter discusses the

conclusion; contributions to knowledge and recommendations on the implementation of e-Government services projects in Libya and areas where further research is required.

9.2 Contribution to Knowledge

Implications for technological leapfrogging and adopting technologies in Libya. The case studies show a powerful way for Libya to leapfrog technology. The main contributions are discussed below:

9.2.1 First the Theoretical Model

The TM is a completely innovative contribution to the study of e-Government services. Regarding to the dearth of resources in Libya, consequently government should not have room for error. The researcher's TM may allow implementers of e-Government services to achieve their goals as efficiently as possible. The model focuses on proposing general guidelines to manage the change during the phases of preparation, formulation, implementation, and evaluation. As outlined in (Chapter two) and (Section 6.4 of chapter six). It also combines two theoretical bodies/Social networks and stakeholder theories to show the importance of how wider social network can contribute to e-Government services implementation.

It provides understanding on the process of technological leapfrogging (See Alhraba Case Study Section 5.6 and Vaccine Case Study Section 5.4). First, the TM acknowledges the five main challenges that a government in Libya may face when attempting to implement e-Government services, which are long-term considerations. (See Chapter Two section 2.5).

The second major branch of the TM is short term planning a strategic management. The principles of which were applied to the specific needs of e-Government services. The fundamental goal of strategic management is to assess capabilities and needs, and to design a plan that responds to those realities in order to achieve specific governments' goals Heeks, (2002). The more specific aspects of each step are covered extensively in chapter four. These comprise of short-term considerations that are necessary for the implementation of e-Government services in Libya.

The third branch of the TM is about the suitable theories for e-Government services and acknowledges two specific theories that are specifically applicable to e-Government services implementation.

The first theory is the stakeholder theory, which is a theory that attempts to identify and analyse the various stakeholders in government, and uses that analysis to predict and assess outcomes (See Chapter Four Section 4.2.3.1 and Chapter Six Section 6.3).

The second critical theory is network theory, which explains the relationships between the stakeholders in the government. By understanding the network of relationships and its influence in government, observers can assess the possibility of e-Government services success by the nature of the networks that support it (See Chapter Four Section 4.2.3.2 at and Chapter Six Section 6.3).

Over all the combination of these three branches provides a comprehensive model to assist, support and deliver better understanding to suggested government's team in Libya that will implement an e-Government services initiative.

Ultimately, the TM is an important tool to be used in Libya that aims to develop an e-Government services program. If widely accepted, the TM may reduce the potential challenges that my face Libya.

9.2.2 Practical contributions

1. Good practice case studies which shows how technologies can be applied at local level see chapter 5 and (Sweisi and Adams, 2007b)
    - The Libyan vaccination program (Sees Section 6.3)
    - Alhraba case study, (See section 5.6)
    - Benghazi blind association BBA (See Chapter Six Section 6.4).

9.2.2.1 Case Studies Contribution

The case studies comprised another critical contributions aspect of this thesis. Three case studies were considered, each case study demonstrated a critical aspect of e-Government services (See Chapter Six).

First is the Alhraba case study, demonstrated the importance of people awareness, and shows how specific steps can be taken to improve citizens' familiarity and access to ICTs. These are specific challenges for governments in Libya; the Alhraba case study offers a good example to send people to study abroad and bring the knowledge, and skills and implement it at the local and country level, than to bring company from broad and after period of time disappear with the knowledge and skills (See Section 6.2).

Second is the Libyan vaccination case, study the programme that successfully tapped into an existing social network by using Mobile phones and text messaging that demonstrated a unique use of e-Government services channels that responds to infrastructure deficiencies. Successful e-Governments services, especially those in Libya, will need to be innovative in order to surmount their challenges (See Section 6.3) and (Figure 18).

The final case study, considered the BBA. One of Libyan blind went abroad for studying computer programs in UK and Switzerland and came back to establish delivering computer and provided Internet courses to his blind colleagues in Benghazi. What is more, they offered the Arabic translation of which is known as AL-ROWYA. These devices are aimed at reducing barriers in public areas for blind and visually-impaired people, to improve their quality of life, and for them to be successful at work and in their education. The aim of this association is to teach blind individuals how to use technologies devices (See section 6.4).

The government should harness and learn from e-innovators, such as those at the Benghazi Association for the Blind, in order to implement new, successful e-Government services initiatives.

These case studies demonstrated the importance of collaboration between government and entrepreneurial innovators. If government, especially in Libya that often suffer from qualified people "brain drains," (See Section 4.2.2.3) can harness the talents and imagination of its citizens for e-Government services, then success is much more likely.

Ultimately, the cases studies provide illustrative examples of successful e-Government services projects in action. As stressed in this study, it is important for governments to have a successful e-Government services project to use as a proof of concept for large, more intricate e-Government services plans. Not only do these projects demonstrate various successes already achieved in Libya, they also can potentially inspire to replicate these programs and design new, even more innovative ICT-based programs.

Experience gained from this study supported the researcher to reach the aim and to propose Theoretical e-Government services Model for Libya that may indicates to successful implementation.

9.3 Limitations of the study

There are numerous limitations to this study, which will be delineated in this section. First, it is important to note that each country is unique with regards to its potential for e-Government services, its unique challenges, and its goals for an e-Government services programme. Therefore, any study that aims to respond to the general issue of implementing e-Government services may necessarily be forced to overlook some specific issues unique to particular countries. Though the TM has been designed to apply to developing countries such as Libya, the ease by which this model can be applied to e-Government services implementation may vary from country to country. As a result, it is important for future researchers and stakeholders to apply the TM while consistently acknowledging their country's unique situation.

Another limitation of this study is that the data surveys and case studies provided is not necessarily representative of the entire Libyan population. Rather, the researcher conducted these surveys and case study in order to provide an illuminating perspective on the prospect of e-Government services implementation in Libya, and point out potential challenges and areas for improvement. Though the data derived in this study is instructive, readers should not construe its findings as the ultimate pronouncement on e-Government services in Libya. Indeed, additional research will bolster and challenge the claims found in this study, to the benefit of Libya's e-Government services initiative.

Finally, it must be noted that e-Government services is a difficult transition, and by no means do the Theoretical Model, nor the recommendations contained in this study; guarantee the success of e-Government services. There are countless potential pitfalls to e-Government services initiatives, some of which might have been overlooked in this study. Though the TM and the data derived in this study will undoubtedly promote the success of e-Government services in Libya, by no means does it guarantee success. Policymakers and stakeholders should be vigilant in their efforts to implement e-Government services, and should certainly not believe that the Theoretical Model, or any other proposed model, is a "magic bullet" that will guarantee the success of their programmes.

9.4 Suggestions for Future Research

This study concludes with a few short recommendations for future research. First, this study focused specifically on Libya. As noted many times in this study, it is important for government to accurately assess the specific situation of their country with respect to e-Government services implementation. Each country has different potential strengths and weaknesses, and understanding them will allow for success in e-Government services.

This study also invites analysis of the Theoretical Model in chapter seven, which is hoped to become a fundamental important tool in e-Government services studies. Challenging and revising that model will assist future research even more.

And finally, assuming that the Libyan government accepts the recommendations of this report, it is hoped that future studies will analyse Libya's e-Government services model and assess its triumphs and failures.

9.5 Recommendations

Ultimately, this study aims to provide a guide to Libyan government; specifically the Libyan government agencies that seek to implement e-Government services as well as contribute to existing knowledge on e-Government services. By providing the theoretical model, the findings of the surveys, and critical case studies results, e-Government services implementation does not seem to be easy. It requires careful evaluation, analysis, and planning. It also requires political will, resources, and time. Studies such as this one need to be carefully considered by governments in order to ensure success. Too many governments

around the word have made missteps during their transition to e-Government services. We must learn from their mistakes, successes and improve upon their models to suit our particular circumstances.

In the light of the knowledge gained from this research and the main findings that presented in this report, the following recommendations can draw out of this study:

- Transformation to e-Government services should be treated as a reform and restructuring process, and not merely the computerisation of government operations. This approach will contribute to building an information society in which the lives of citizens are empowered and enriched by access to information, social, economic and political opportunities that it offers. This is rapidly becoming a key national priority for many countries across the globe, rich or poor.
- Government should give loan to graduated people to implement projects such as Alhraba and BBA that may help the effective implementation of e-Government services project in Libya.
- Government in Libya should improve the education system that may help create or/and awareness about usage of e-Government services.
- Delivering services through different e-means such as Mobile phones that used in national vaccination program since it is available and cheapest to reach people everywhere anytime and reduce time, distance and effort between people and government sector.
- New and existing technologies should be improved and used as a means for achieving the larger goals of Libyan society. Instead of focusing on the technical aspects of e-Government services, governments should think about creating an intelligent and information based society responding to citizens' needs and changes in the external and internal environments.
- Improve people's awareness this can be achieved by delivering training courses on computers, internet and knowledge on e-Government services by using the existing educational institutions. Continually sending students to study abroad may improve the use of new technologies and how to implement it. Supporting educated people and local champions that are ready to contribute to help. Encourage people for better understanding and usage skills on new technologies. Train local people to create a

pool of expertise on e-Government services since they come from the same culture and understand the people better.

- Availability of new technologies. This can be achieved by increasing availability of computers, access to internet, anytime, anywhere and training courses that are affordable with the income of the people.
- Do not re-invent the wheel. Borrow ideas from other regions or countries that have successfully implemented similar projects. Visit those governments and talk with the officials in charge. This is a relatively low-cost way of learning.
- Support social networking, as with the vaccine example.
- Understand the basic reasons for pursuing e-Government services before committing the time, resources and political support necessary to successfully implement an e-Government services initiative. It is neither easy nor cheap. Government leaders must consider an array of issues confronting the citizens. Governments need to integrate the work systems, processes, employee learning, development and welfare in a very strong e-Government services performance management system.
- Find e-leaders to support e-Government services initiatives. Those e-leaders can help to build political support across government, push for change and resources, publicly take ownership of the project and commit their time on a sustained basis.
- Involve and improve people's participation. Achieving e-Government services success requires active involvement and continuous participation and input from the key stakeholders, public, businesses and other partners who use e-Government services. Their voices, ideas, skills and competencies are essential to make e-Government services successful.
- Partnership with the private sector where each partner should do what he can do best. The private sector can be a source of cost-sharing, technology and project management expertise. Create incentives to help local companies grow and become viable partners in e-Government services.
- Share information with the public and across government agencies, departments and different levels within them. Information is the backbone of e-Government services. Smooth, rapid information-sharing will enable government to take a more functional approach to services.

- Foster cultural diversity. Government consists of different organisations and layers, where each organisation has its own culture. In pursuing cultural change, government is confronted with cultural diversity. This requires government to achieve cultural intensity (the degree to which the whole people of government belief in the new values, expectations and guidelines) and cultural integration (the degree to which the whole government share the same culture).
- Adjust vision, goals, objectives, priorities and strategies. With such a dramatic change government cannot continue to proceed with the same vision, goals, objectives and priorities. Otherwise it will be leading the whole government to death. Re-defining the governments' vision, goals, objectives, priorities and strategies will provide government with the roadmap to move in the required direction.
- Establish a clear shared vision for e-Government services. The transformation process should start by establishing a broad vision of e-Government services that is shared by all stakeholders including citizens, businesses, officials, civil society groups and others. The broad vision should flow from the large concerns of a society. If the public and private sectors are consulted only after e-Government services plans have been developed and implementation has begun, e-Government services programmes risk being underused or even irrelevant to users.
- Demonstrate success story. Like all reforms, it is important to show success early and not spend too much time on developing visions, strategies and work plans. A successful initial project can become the selling point for all future efforts and create the political momentum needed to move e-Government services ahead. A small success story can become a powerful example that others can imitate.
- Overcome and manage resistance to change. Explain to employees the goals of the transformation. Be clear that they are not the enemy or the targets of reform. Explain to officials what their new jobs will be. It is vital to manage expectations and respond appropriately to shifting perceptions at all stages while the e-Government services project unfolds.
- Make sure you have the resources, personnel, training and clear policies necessary for handling public communications, queries and complaints. When e-Government services enables the public to communicate with government, public participation often turns into a flood of communications, and often complaints.

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APPENDIX A: analysis of the data collected from the online questionnaires

We set the online questionnaire on the Libyan e-government website's main page; so, whoever visit it can contribute. Thus the number of questionnaires filled was three hundred and ninety six (396). The stakeholders are (Students, Engineers, Teachers, Doctors, Computers, Lawyers, Lecturers, Workers Vendors Policemen, Farmers, Unemployed, and Others) Below are the findings in respect of each piece of information contained in the online questionnaires and results are shown through cross tabulations and charts

1. Personal Information:

Gender (See Table 1)

Table 1: Gender distribution

Stakeholders * Gender

			Gender		
			Male	Female	Total
Stakeholders	Students	Count	24	1	25
		% of Total	6.1%	.3%	6.3%
	engineers	Count	112	4	116
		% of Total	28.3%	1.0%	29.3%
	Teachers	Count	20	4	24
		% of Total	5.1%	1.0%	6.1%
	Doctors	Count	6	1	7
		% of Total	1.5%	.3%	1.8%
	Computers	Count	23	3	26
		% of Total	5.8%	.8%	6.6%
	Lawyers	Count	7	0	7
		% of Total	1.8%	.0%	1.8%
	Lecuturers	Count	35	1	36
		% of Total	8.8%	.3%	9.1%
	Workers	Count	6	0	6
		% of Total	1.5%	.0%	1.5%
	Venders	Count	22	0	22
		% of Total	5.6%	.0%	5.6%
	Policmen	Count	1	0	1
		% of Total	.3%	.0%	.3%
	Farmers	Count	1	0	1
		% of Total	.3%	.0%	.3%
	Unemployed	Count	17	0	17
		% of Total	4.3%	.0%	4.3%
	Others	Count	101	7	108
		% of Total	25.5%	1.8%	27.3%
Total		Count	375	21	396
		% of Total	94.7%	5.3%	100.0%

It can be seen from the table 1 that mainly of the stakeholders' gender is male and only a small female group participates in this online survey.

Cities (See Table 2)

Table 2: Cities Distribution

Stakeholders * City

			Stakeholders													
			Students	engineers	Teachers	Doctors	Computers	Lawyers	Lecturers	Workers	Venders	Policmen	Farmers	Unemployed	Others	Total
City	Gharyan	Count	1	2	2	1	1	0	0	0	0	0	0	0	2	9
		% of Total	.3%	.5%	.5%	.3%	.3%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.5%	2.3%
	Az Zawiyah	Count	1	5	1	1	0	0	3	0	1	0	0	0	3	15
		% of Total	.3%	1.3%	.3%	.3%	.0%	.0%	.8%	.0%	.3%	.0%	.0%	.0%	.8%	3.8%
	Tripoli	Count	8	56	10	2	12	3	18	1	10	0	0	3	46	169
		% of Total	2.0%	14.1%	2.5%	.5%	3.0%	.8%	4.5%	.3%	2.5%	.0%	.0%	.8%	11.6%	42.7%
	Banghazi	Count	2	10	2	0	2	2	5	2	4	0	0	6	19	54
		% of Total	.5%	2.5%	.5%	.0%	.5%	.5%	1.3%	.5%	1.0%	.0%	.0%	1.5%	4.8%	13.6%
	Zliten	Count	0	0	1	0	1	0	0	1	0	0	0	0	2	5
		% of Total	.0%	.0%	.3%	.0%	.3%	.0%	.0%	.3%	.0%	.0%	.0%	.0%	.5%	1.3%
	Misratah	Count	3	7	0	1	3	0	2	0	2	1	1	0	9	29
		% of Total	.8%	1.8%	.0%	.3%	.8%	.0%	.5%	.0%	.5%	.3%	.3%	.0%	2.3%	7.3%
	Darnah	Count	2	1	0	0	1	0	2	0	1	0	0	0	4	11
		% of Total	.5%	.3%	.0%	.0%	.3%	.0%	.5%	.0%	.3%	.0%	.0%	.0%	1.0%	2.8%
	Sabha	Count	1	6	0	0	2	1	3	0	0	0	0	1	3	17
		% of Total	.3%	1.5%	.0%	.0%	.5%	.3%	.8%	.0%	.0%	.0%	.0%	.3%	.8%	4.3%
	Nalout	Count	1	0	0	0	0	0	1	0	0	0	0	0	2	4
		% of Total	.3%	.0%	.0%	.0%	.0%	.0%	.3%	.0%	.0%	.0%	.0%	.0%	.5%	1.0%
	Aowjalah	Count	0	0	0	0	0	0	0	0	0	0	0	0	1	1
		% of Total	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.3%	.3%
	Ajdabiya	Count	0	8	2	1	0	0	0	2	0	0	0	0	1	14
		% of Total	.0%	2.0%	.5%	.3%	.0%	.0%	.0%	.5%	.0%	.0%	.0%	.0%	.3%	3.5%
	Surt	Count	0	3	0	0	2	0	0	0	0	0	0	1	4	10
		% of Total	.0%	.8%	.0%	.0%	.5%	.0%	.0%	.0%	.0%	.0%	.0%	.3%	1.0%	2.5%
	Wadi-Al-Hayaa	Count	0	0	1	0	0	0	0	0	0	0	0	0	0	1
		% of Total	.0%	.0%	.3%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.3%
	Alkomes	Count	0	3	1	0	2	0	0	0	1	0	0	0	1	8
		% of Total	.0%	.8%	.3%	.0%	.5%	.0%	.0%	.0%	.3%	.0%	.0%	.0%	.3%	2.0%
	Ghadamis	Count	0	0	0	0	0	0	0	0	0	0	0	0	1	1
		% of Total	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.3%	.3%
	Zoarah	Count	0	0	0	0	0	0	0	0	0	0	0	1	0	1
		% of Total	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.3%	.0%	.3%
	Raslanoph	Count	0	3	0	0	0	0	0	0	1	0	0	0	2	6
		% of Total	.0%	.8%	.0%	.0%	.0%	.0%	.0%	.0%	.3%	.0%	.0%	.0%	.5%	1.5%
	Albriga	Count	0	0	0	0	0	0	0	0	0	0	0	0	1	1
		% of Total	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.3%	.3%
	Albida	Count	0	2	1	0	0	0	0	0	0	0	0	1	1	5
		% of Total	.0%	.5%	.3%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.3%	.3%	1.3%
	Tubrok	Count	0	3	0	0	0	0	1	0	0	0	0	0	1	5
		% of Total	.0%	.8%	.0%	.0%	.0%	.0%	.3%	.0%	.0%	.0%	.0%	.0%	.3%	1.3%
	Regdalin	Count	0	0	0	0	0	1	0	0	0	0	0	0	0	1
		% of Total	.0%	.0%	.0%	.0%	.0%	.3%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.3%
	Al-marj	Count	0	2	0	0	0	0	0	0	0	0	0	1	0	3
		% of Total	.0%	.5%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.3%	.0%	.8%
	BeniWalid	Count	1	0	0	0	0	0	0	0	0	0	0	0	0	1
		% of Total	.3%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.3%
	Wadan	Count	0	0	1	0	0	0	0	0	0	0	0	0	1	2
		% of Total	.0%	.0%	.3%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.3%	.5%
	Whon	Count	0	0	0	0	0	0	0	0	0	0	0	1	0	1
		% of Total	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.3%	.0%	.3%
	Wadi-Al-Shatii	Count	0	0	0	0	0	0	0	0	0	0	0	1	0	1
		% of Total	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.3%	.0%	.3%
	AlQubah	Count	0	0	0	0	0	0	0	0	1	0	0	0	0	1
		% of Total	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.3%	.0%	.0%	.0%	.0%	.3%
	Alabiar	Count	0	0	1	0	0	0	0	0	0	0	0	0	0	1
		% of Total	.0%	.0%	.3%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.3%
	Al-Kufrah	Count	0	0	1	0	0	0	0	0	0	0	0	0	0	1
		% of Total	.0%	.0%	.3%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.3%
	Alharaba	Count	0	0	0	0	0	0	1	0	0	0	0	0	0	1
		% of Total	.0%	.0%	.0%	.0%	.0%	.0%	.3%	.0%	.0%	.0%	.0%	.0%	.0%	.3%
	Alajilat	Count	0	0	0	0	0	0	0	0	0	0	0	1	0	1
		% of Total	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.3%	.0%	.3%
	OUT	Count	0	0	0	0	0	0	0	0	0	0	0	0	1	1
		% of Total	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.3%	.3%
	Almoutred	Count	0	0	0	0	0	0	0	0	0	0	0	0	1	1
		% of Total	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.3%	.3%
	Jedh	Count	2	0	0	0	0	0	0	0	0	0	0	0	0	2
		% of Total	.5%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.5%
	Hangary	Count	0	0	0	0	0	0	0	0	0	0	0	0	1	1
		% of Total	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.3%	.3%
	UK	Count	2	4	0	1	0	0	0	0	1	0	0	0	1	9
		% of Total	.5%	1.0%	.0%	.3%	.0%	.0%	.0%	.0%	.3%	.0%	.0%	.0%	.3%	2.3%
	USA	Count	0	1	0	0	0	0	0	0	0	0	0	0	0	1
		% of Total	.0%	.3%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.3%
	Malizia	Count	1	0	0	0	0	0	0	0	0	0	0	0	0	1
		% of Total	.3%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.3%
Total		Count	25	116	24	7	26	7	36	6	22	1	1	17	108	396
		% of Total	6.3%	29.3%	6.1%	1.8%	6.6%	1.8%	9.1%	1.5%	5.6%	.3%	.3%	4.3%	27.3%	100.0%

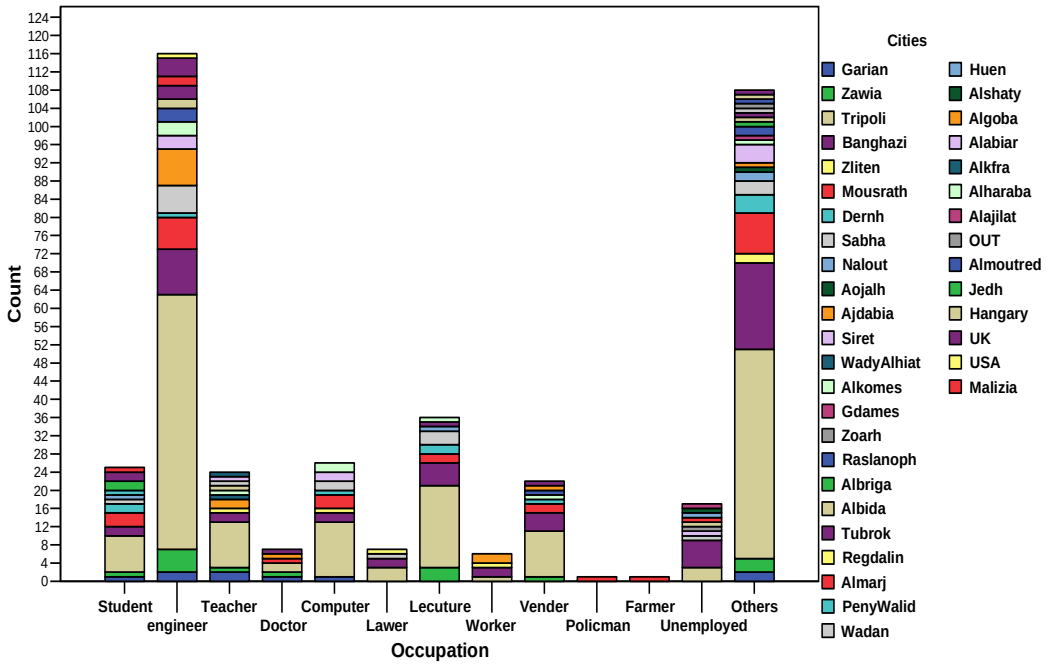

Chart 1: Cities Distribution

Table 2 and the chart 1 show the online participations in every city and country stated in the table in respect to each stakeholder. Also, shows that most of the participations are from people who live in big cities such as Tripoli, Benghazi, Misratah, Sabha, Az-Zawia, Ajdabiya, Surt, Gharyan, Alkoms, and the UK. Limited participations are from the other of the cities and the countries.

Age Distribution (See Table 3)

Table 3: Age Distribution

Stakeholders * Age

			Age							
			Less than 18	19 to 25	26 to 35	36 to 45	46 to 55	56 to 65	Over 66	Total
Stakeholders	**Students**	Count	1	16	6	2	0	0	0	25
		% of Total	.3%	4.0%	1.5%	.5%	.0%	.0%	.0%	6.3%
	engineers	Count	0	6	65	33	12	0	0	116
		% of Total	.0%	1.5%	16.4%	8.3%	3.0%	.0%	.0%	29.3%
	Teachers	Count	0	1	16	6	1	0	0	24
		% of Total	.0%	.3%	4.0%	1.5%	.3%	.0%	.0%	6.1%
	Doctors	Count	0	1	2	3	1	0	0	7
		% of Total	.0%	.3%	.5%	.8%	.3%	.0%	.0%	1.8%
	Computers	Count	0	4	18	2	2	0	0	26
		% of Total	.0%	1.0%	4.5%	.5%	.5%	.0%	.0%	6.6%
	Lawyers	Count	0	0	3	2	2	0	0	7
		% of Total	.0%	.0%	.8%	.5%	.5%	.0%	.0%	1.8%
	Lecuturers	Count	0	1	13	18	2	1	1	36
		% of Total	.0%	.3%	3.3%	4.5%	.5%	.3%	.3%	9.1%
	Workers	Count	0	2	2	2	0	0	0	6
		% of Total	.0%	.5%	.5%	.5%	.0%	.0%	.0%	1.5%
	Venders	Count	0	0	13	6	3	0	0	22
		% of Total	.0%	.0%	3.3%	1.5%	.8%	.0%	.0%	5.6%
	Policmen	Count	0	0	1	0	0	0	0	1
		% of Total	.0%	.0%	.3%	.0%	.0%	.0%	.0%	.3%
	Farmers	Count	0	0	1	0	0	0	0	1
		% of Total	.0%	.0%	.3%	.0%	.0%	.0%	.0%	.3%
	Unemployed	Count	0	8	7	2	0	0	0	17
		% of Total	.0%	2.0%	1.8%	.5%	.0%	.0%	.0%	4.3%
	Others	Count	0	9	42	40	14	3	0	108
		% of Total	.0%	2.3%	10.6%	10.1%	3.5%	.8%	.0%	27.3%
Total		Count	1	48	189	116	37	4	1	396
		% of Total	.3%	12.1%	47.7%	29.3%	9.3%	1.0%	.3%	100.0%

The observation is that the majority of the online stakeholders are males between the ages of (26 to 35 years old) - are nearly half of them, and the (36 to 45 years old) - are about the third. Only a small portion are either less than these ages or greater. These numbers prove that most of the online users are relatively young age.

Education Distribution (See Table 4)

Table 4: Education Distribution

Stakeholders * Education

			Education							
			No education	Secondary School	High School	High Institute	Bachelor	Master Degree	PhD	Total
Stakeholders	Students	Count	0	0	11	0	6	6	2	25
		% of Total	.0%	.0%	2.8%	.0%	1.5%	1.5%	.5%	6.3%
	engineers	Count	0	0	0	28	63	23	2	116
		% of Total	.0%	.0%	.0%	7.1%	15.9%	5.8%	.5%	29.3%
	Teachers	Count	0	0	0	11	13	0	0	24
		% of Total	.0%	.0%	.0%	2.8%	3.3%	.0%	.0%	6.1%
	Doctors	Count	0	0	0	0	5	0	2	7
		% of Total	.0%	.0%	.0%	.0%	1.3%	.0%	.5%	1.8%
	Computers	Count	0	0	18	0	6	2	0	26
		% of Total	.0%	.0%	4.5%	.0%	1.5%	.5%	.0%	6.6%
	Lawyers	Count	0	0	0	0	5	2	0	7
		% of Total	.0%	.0%	.0%	.0%	1.3%	.5%	.0%	1.8%
	Lecuturers	Count	0	0	0	0	0	25	11	36
		% of Total	.0%	.0%	.0%	.0%	.0%	6.3%	2.8%	9.1%
	Workers	Count	0	0	6	0	0	0	0	6
		% of Total	.0%	.0%	1.5%	.0%	.0%	.0%	.0%	1.5%
	Venders	Count	0	0	8	0	9	5	0	22
		% of Total	.0%	.0%	2.0%	.0%	2.3%	1.3%	.0%	5.6%
	Policmen	Count	0	0	1	0	0	0	0	1
		% of Total	.0%	.0%	.3%	.0%	.0%	.0%	.0%	.3%
	Farmers	Count	0	0	1	0	0	0	0	1
		% of Total	.0%	.0%	.3%	.0%	.0%	.0%	.0%	.3%
	Unemployed	Count	0	0	11	0	6	0	0	17
		% of Total	.0%	.0%	2.8%	.0%	1.5%	.0%	.0%	4.3%
	Others	Count	2	1	33	0	58	14	0	108
		% of Total	.5%	.3%	8.3%	.0%	14.6%	3.5%	.0%	27.3%
Total		Count	2	1	89	39	171	77	17	396
		% of Total	.5%	.3%	22.5%	9.8%	43.2%	19.4%	4.3%	100.0%

2. Subject (e-government) information:

The analysis of the main questions that makes up the survey

Q1. **English skills** (See Table 5)

Table 5: English skills

Stakeholders * English Skills

			English Skills		
			Yes	No	Total
Stakeholders	Students	Count	11	14	25
		% of Total	2.8%	3.5%	6.3%
	engineers	Count	43	73	116
		% of Total	10.9%	18.4%	29.3%
	Teachers	Count	18	6	24
		% of Total	4.5%	1.5%	6.1%
	Doctors	Count	3	4	7
		% of Total	.8%	1.0%	1.8%
	Computers	Count	15	11	26
		% of Total	3.8%	2.8%	6.6%
	Lawyers	Count	4	3	7
		% of Total	1.0%	.8%	1.8%
	Lecuturers	Count	10	26	36
		% of Total	2.5%	6.6%	9.1%
	Workers	Count	4	2	6
		% of Total	1.0%	.5%	1.5%
	Venders	Count	12	10	22
		% of Total	3.0%	2.5%	5.6%
	Policmen	Count	1	0	1
		% of Total	.3%	.0%	.3%
	Farmers	Count	1	0	1
		% of Total	.3%	.0%	.3%
	Unemployed	Count	14	3	17
		% of Total	3.5%	.8%	4.3%
	Others	Count	59	49	108
		% of Total	14.9%	12.4%	27.3%
Total		Count	195	201	396
		% of Total	49.2%	50.8%	100.0%

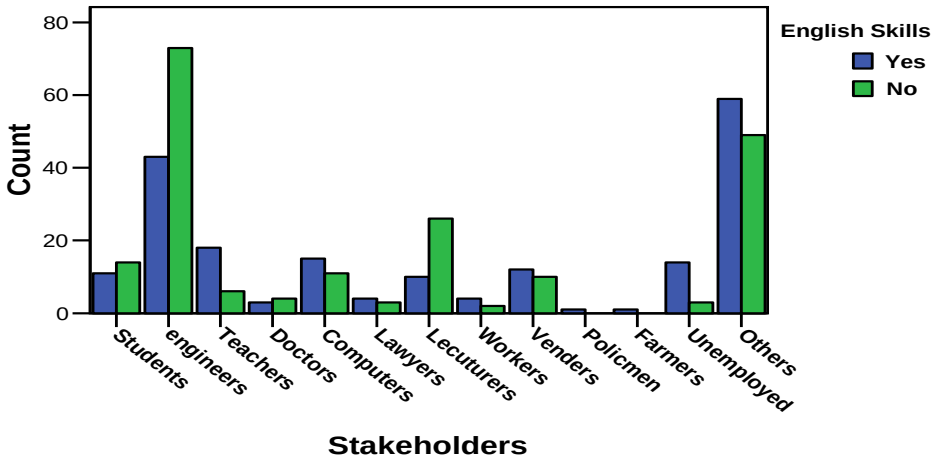

Chart 2: English skills

It can be seen from the above table and chart that there are a significant number of participants who have English skills. But, nearly more than half of them do not have.

Q2. **Computer skills** (See Table 6)

Table 6: Computer skills

Stakeholders * Computer Skills

			Computer Skills						
			Missing data	Beginner	Basic	Average	More than average	Advanced	Total
Stakeholders	Students	Count	0	1	1	4	7	12	25
		% of Total	.0%	.3%	.3%	1.0%	1.8%	3.0%	6.3%
	engineers	Count	0	2	5	17	40	52	116
		% of Total	.0%	.5%	1.3%	4.3%	10.1%	13.1%	29.3%
	Teachers	Count	0	3	1	9	5	6	24
		% of Total	.0%	.8%	.3%	2.3%	1.3%	1.5%	6.1%
	Doctors	Count	0	0	0	4	1	2	7
		% of Total	.0%	.0%	.0%	1.0%	.3%	.5%	1.8%
	Computers	Count	0	0	0	6	10	10	26
		% of Total	.0%	.0%	.0%	1.5%	2.5%	2.5%	6.6%
	Lawyers	Count	0	0	2	2	2	1	7
		% of Total	.0%	.0%	.5%	.5%	.5%	.3%	1.8%
	Lecuturers	Count	0	1	1	11	10	13	36
		% of Total	.0%	.3%	.3%	2.8%	2.5%	3.3%	9.1%
	Workers	Count	0	0	0	5	1	0	6
		% of Total	.0%	.0%	.0%	1.3%	.3%	.0%	1.5%
	Venders	Count	0	1	1	9	4	7	22
		% of Total	.0%	.3%	.3%	2.3%	1.0%	1.8%	5.6%
	Policmen	Count	0	0	1	0	0	0	1
		% of Total	.0%	.0%	.3%	.0%	.0%	.0%	.3%
	Farmers	Count	0	0	0	1	0	0	1
		% of Total	.0%	.0%	.0%	.3%	.0%	.0%	.3%
	Unemployed	Count	0	1	1	7	3	5	17
		% of Total	.0%	.3%	.3%	1.8%	.8%	1.3%	4.3%
	Others	Count	1	3	10	38	28	28	108
		% of Total	.3%	.8%	2.5%	9.6%	7.1%	7.1%	27.3%
Total		Count	1	12	23	113	111	136	396
		% of Total	.3%	3.0%	5.8%	28.5%	28.0%	34.3%	100.0%

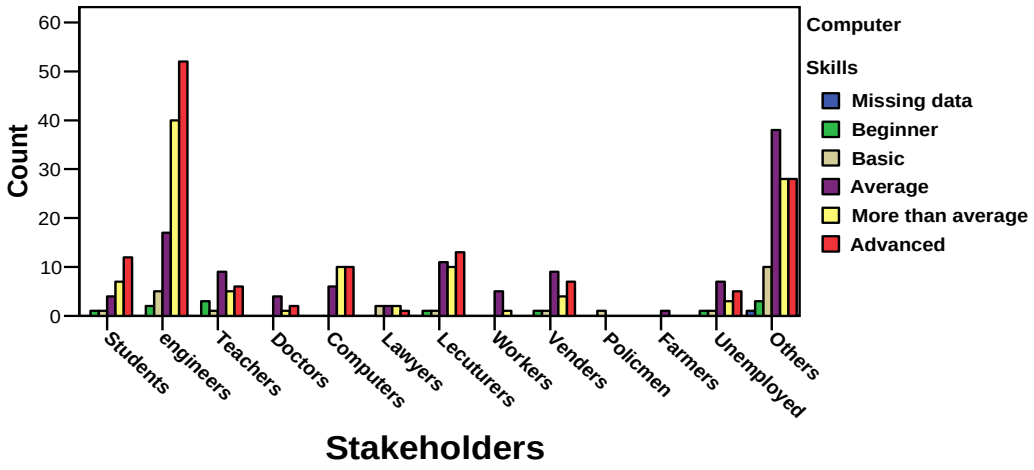

Chart 3: Computer Skills

The results on Computer Skills indicate that the majority of the participants have Advance computer skills and thirty five percent of them are just beginners or have basic skills. This proves that, in Libya, the infrastructure of the computer literacy is high between most of the Internet users, which is proved from the above that only highly educated people have the opportunity to obtain these skills.

Q3. Where usually using Internet (See Table 7)

Table 7: Where participant usually using Internet

Stakeholders * Where usually using Computer/Internet

			Where usually using Computer/Internet						
			Missing data	At work	At Home	At School	Coffee Net	More than one choice	Total
Stakeholders	Students	Count	0	0	7	1	4	13	25
		% of Total	.0%	.0%	1.8%	.3%	1.0%	3.3%	6.3%
	engineers	Count	1	17	7	2	6	83	116
		% of Total	.3%	4.3%	1.8%	.5%	1.5%	21.0%	29.3%
	Teachers	Count	1	0	4	1	5	13	24
		% of Total	.3%	.0%	1.0%	.3%	1.3%	3.3%	6.1%
	Doctors	Count	0	1	3	0	1	2	7
		% of Total	.0%	.3%	.8%	.0%	.3%	.5%	1.8%
	Computers	Count	0	5	1	0	3	17	26
		% of Total	.0%	1.3%	.3%	.0%	.8%	4.3%	6.6%
	Lawyers	Count	0	0	0	0	1	6	7
		% of Total	.0%	.0%	.0%	.0%	.3%	1.5%	1.8%
	Lecuturers	Count	1	1	5	1	4	24	36
		% of Total	.3%	.3%	1.3%	.3%	1.0%	6.1%	9.1%
	Workers	Count	0	1	2	0	3	0	6
		% of Total	.0%	.3%	.5%	.0%	.8%	.0%	1.5%
	Venders	Count	1	6	7	0	1	7	22
		% of Total	.3%	1.5%	1.8%	.0%	.3%	1.8%	5.6%
	Policmen	Count	0	0	0	0	0	1	1
		% of Total	.0%	.0%	.0%	.0%	.0%	.3%	.3%
	Farmers	Count	0	0	0	0	0	1	1
		% of Total	.0%	.0%	.0%	.0%	.0%	.3%	.3%
	Unemployed	Count	0	1	2	1	9	4	17
		% of Total	.0%	.3%	.5%	.3%	2.3%	1.0%	4.3%
	Others	Count	0	10	12	0	18	68	108
		% of Total	.0%	2.5%	3.0%	.0%	4.5%	17.2%	27.3%
Total		Count	4	42	50	6	55	239	396
		% of Total	1.0%	10.6%	12.6%	1.5%	13.9%	60.4%	100.0%

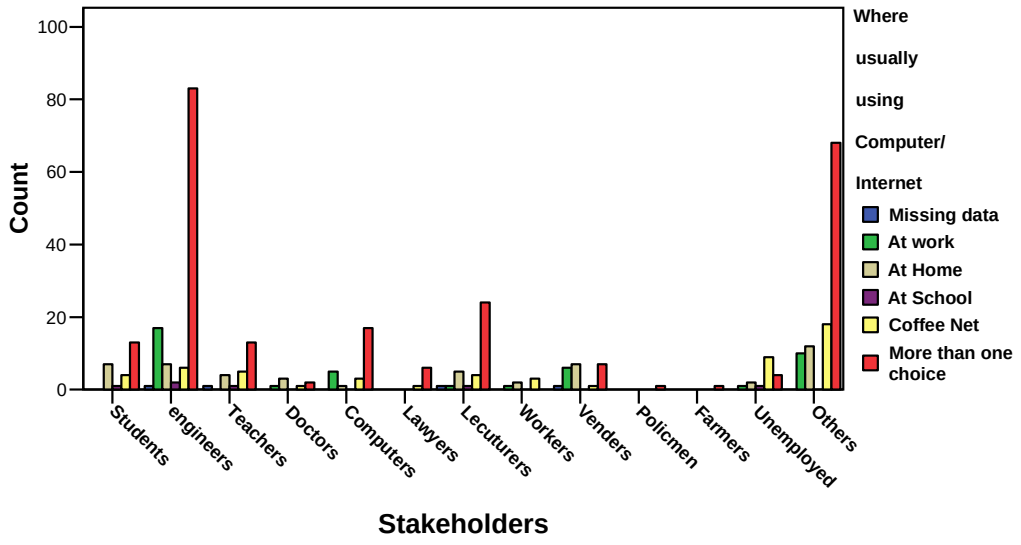

Chart 4: Where participant usually using Internet

From the above table and chart, it is clear that the largest part of participants are using computer/Internet in more than one place from the list above, in respect of each stakeholder. Also, about twenty four percent of the participants are using Internet at home/work only. Very few of the participants uses internet at cafes. It implies that they have regular access to Internet and therefore access to e-government website easily if they want to. This is due to the availability of computers and Internet access for this highly educated fragment of the common public who are using the internet more than others.

Q4. Period since first use of Internet (See table 8)

Table 8: Period since first use of Internet

Stakeholders * Period since first Use of Internet

			Period Since first use of Internet					
			Missing data	Less than 2 years	2 to 5 years	From 6 to 10 years	More than 10 years	Total
Stakeholders	Students	Count	0	5	15	4	1	25
		% of Total	.0%	1.3%	3.8%	1.0%	.3%	6.3%
	engineers	Count	0	10	46	45	15	116
		% of Total	.0%	2.5%	11.6%	11.4%	3.8%	29.3%
	Teachers	Count	0	7	13	2	2	24
		% of Total	.0%	1.8%	3.3%	.5%	.5%	6.1%
	Doctors	Count	0	1	3	2	1	7
		% of Total	.0%	.3%	.8%	.5%	.3%	1.8%
	Computers	Count	0	4	11	8	3	26
		% of Total	.0%	1.0%	2.8%	2.0%	.8%	6.6%
	Lawyers	Count	0	3	3	1	0	7
		% of Total	.0%	.8%	.8%	.3%	.0%	1.8%
	Lecuturers	Count	0	5	11	14	6	36
		% of Total	.0%	1.3%	2.8%	3.5%	1.5%	9.1%
	Workers	Count	0	2	4	0	0	6
		% of Total	.0%	.5%	1.0%	.0%	.0%	1.5%
	Venders	Count	1	1	11	6	3	22
		% of Total	.3%	.3%	2.8%	1.5%	.8%	5.6%
	Policmen	Count	0	1	0	0	0	1
		% of Total	.0%	.3%	.0%	.0%	.0%	.3%
	Farmers	Count	0	0	1	0	0	1
		% of Total	.0%	.0%	.3%	.0%	.0%	.3%
	Unemployed	Count	0	5	10	2	0	17
		% of Total	.0%	1.3%	2.5%	.5%	.0%	4.3%
	Others	Count	0	13	54	32	9	108
		% of Total	.0%	3.3%	13.6%	8.1%	2.3%	27.3%
Total		Count	1	57	182	116	40	396
		% of Total	.3%	14.4%	46.0%	29.3%	10.1%	100.0%

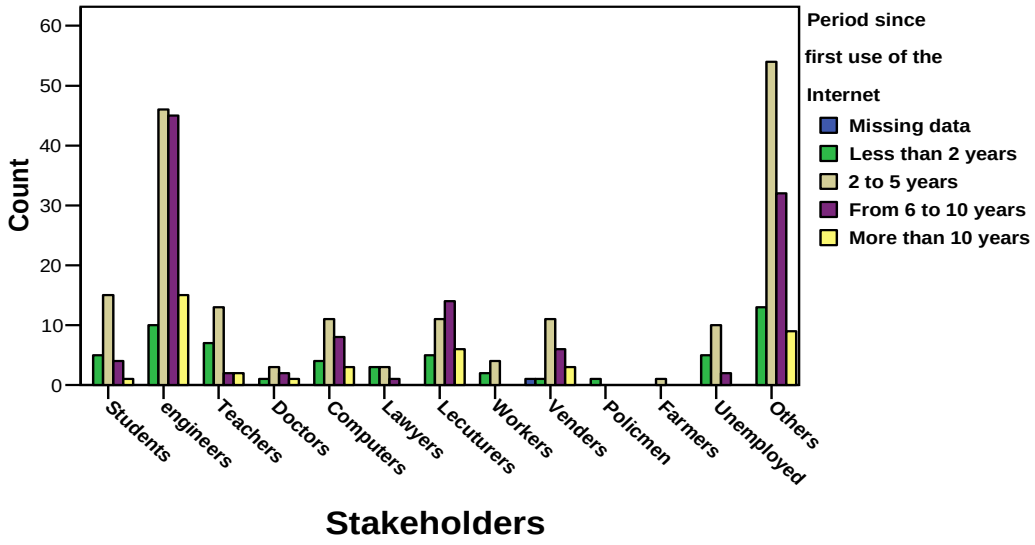

Chart 5: Period since first use of Internet

From the above it is again clear that significant number of the participants is using Internet from only 2 to 5 years ago. More than forty percents are using Internet from a quite long time. More than fourteen percent have started using it quite recently. This can be attributed to availability of the infrastructure and early introduction of provision of internet for this part of educated stakeholders such as engineers, lecturers, computers, vendors, students, and others. Therefore, there is possibility for a significant access to e-government website.

Q5. Frequency of using Internet (See Table 9)

Table 9: Frequency of using Interne

Stakeholders * Frequencey of using Internet

			Frequency of using Internet				
			Daily	3 to 4 times a week	Once a week	Once a month	Total
Stakeholders	Students	Count	18	4	3	0	25
		% of Total	4.5%	1.0%	.8%	.0%	6.3%
	engineers	Count	80	28	8	0	116
		% of Total	20.2%	7.1%	2.0%	.0%	29.3%
	Teachers	Count	11	9	2	2	24
		% of Total	2.8%	2.3%	.5%	.5%	6.1%
	Doctors	Count	4	3	0	0	7
		% of Total	1.0%	.8%	.0%	.0%	1.8%
	Computers	Count	19	4	3	0	26
		% of Total	4.8%	1.0%	.8%	.0%	6.6%
	Lawyers	Count	3	4	0	0	7
		% of Total	.8%	1.0%	.0%	.0%	1.8%
	Lecuturers	Count	22	11	2	1	36
		% of Total	5.6%	2.8%	.5%	.3%	9.1%
	Workers	Count	1	5	0	0	6
		% of Total	.3%	1.3%	.0%	.0%	1.5%
	Venders	Count	16	2	3	1	22
		% of Total	4.0%	.5%	.8%	.3%	5.6%
	Policmen	Count	1	0	0	0	1
		% of Total	.3%	.0%	.0%	.0%	.3%
	Farmers	Count	0	1	0	0	1
		% of Total	.0%	.3%	.0%	.0%	.3%
	Unemployed	Count	9	6	2	0	17
		% of Total	2.3%	1.5%	.5%	.0%	4.3%
	Others	Count	65	27	15	1	108
		% of Total	16.4%	6.8%	3.8%	.3%	27.3%
Total		Count	249	104	38	5	396
		% of Total	62.9%	26.3%	9.6%	1.3%	100.0%

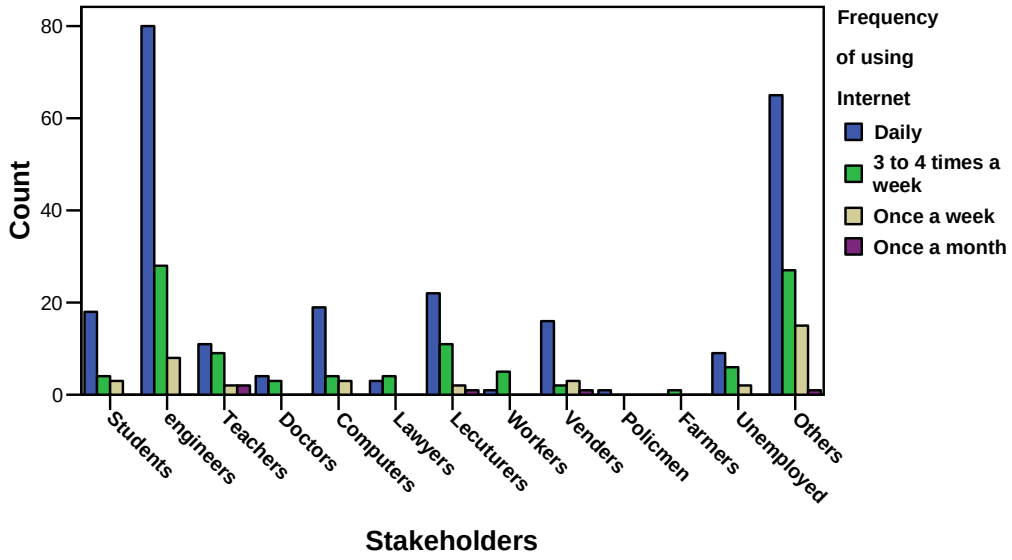

Chart 6: Frequency of using Internet

As the frequency statistics indicate that for most of the participants the usage frequency of the Internet are daily and from 3 to 4 times a week categories. And very few of the participants belong to the low-frequency (once a week) category. Thus, most of them will be having a chance to visit the e-government site(s).

Q6. Period of average use of the Internet (See Table 10)

Table 10: ***Period of average use of the Internet***

Stakeholders * Period of average use of Internet

			Period of average use of Internet				
			Less than 2 hours	2 to 5 hours	6 to 10 hours	More than 10 hours	Total
Stakeholders	Students	Count	9	12	3	1	25
		% of Total	2.3%	3.0%	.8%	.3%	6.3%
	engineers	Count	45	50	17	4	116
		% of Total	11.4%	12.6%	4.3%	1.0%	29.3%
	Teachers	Count	7	14	2	1	24
		% of Total	1.8%	3.5%	.5%	.3%	6.1%
	Doctors	Count	4	3	0	0	7
		% of Total	1.0%	.8%	.0%	.0%	1.8%
	Computers	Count	6	15	4	1	26
		% of Total	1.5%	3.8%	1.0%	.3%	6.6%
	Lawyers	Count	2	5	0	0	7
		% of Total	.5%	1.3%	.0%	.0%	1.8%
	Lecuturers	Count	13	19	3	1	36
		% of Total	3.3%	4.8%	.8%	.3%	9.1%
	Workers	Count	4	1	0	1	6
		% of Total	1.0%	.3%	.0%	.3%	1.5%
	Venders	Count	8	13	1	0	22
		% of Total	2.0%	3.3%	.3%	.0%	5.6%
	Policmen	Count	1	0	0	0	1
		% of Total	.3%	.0%	.0%	.0%	.3%
	Farmers	Count	0	1	0	0	1
		% of Total	.0%	.3%	.0%	.0%	.3%
	Unemployed	Count	7	6	3	1	17
		% of Total	1.8%	1.5%	.8%	.3%	4.3%
	Others	Count	50	42	9	7	108
		% of Total	12.6%	10.6%	2.3%	1.8%	27.3%
Total		Count	156	181	42	17	396
		% of Total	39.4%	45.7%	10.6%	4.3%	100.0%

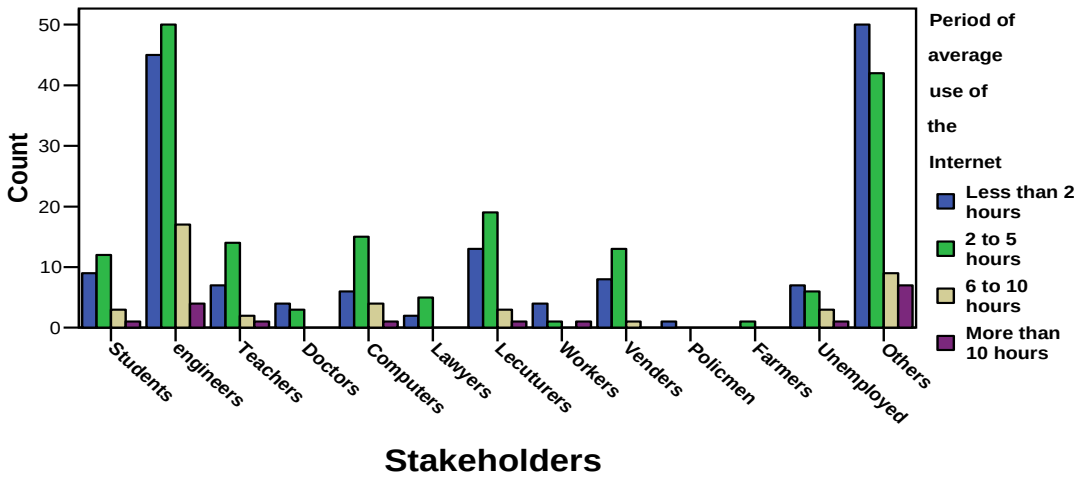

Chart 7: Period of average use of the Internet.

Here again, we notice that very high number of the participants belong to the average-use (2 to 5 hours category. More than thirty nine percent belongs to the low-use (less than 2

hours) category. Then, the numbers of often usage of it are few. And among those who use for less than two hours, there is a little chance that they will use the Internet to access e-government site(s) because of other interests of theirs. This proves that there are some barriers preventing most of them from staying online for long period. Due to the high cost of Internet access as we will see later

Q7. **Purposes of surfing the Internet** (See Table 11)

Table 11: Purposes of surfing the Internet

Stakeholders * Purposes of surfing the Internet

			Purposes of surfing the Internet							
			Search for information	Education purpose	E-commerce purpose	E-mail	E-Gov-website	something else	More than one choice	Total
Stakeholders	Students	Count	1	1	0	0	0	0	23	25
		% of Total	.3%	.3%	.0%	.0%	.0%	.0%	5.8%	6.3%
	engineers	Count	3	1	0	0	1	0	111	116
		% of Total	.8%	.3%	.0%	.0%	.3%	.0%	28.0%	29.3%
	Teachers	Count	1	1	0	0	0	0	22	24
		% of Total	.3%	.3%	.0%	.0%	.0%	.0%	5.6%	6.1%
	Doctors	Count	1	0	0	0	0	0	6	7
		% of Total	.3%	.0%	.0%	.0%	.0%	.0%	1.5%	1.8%
	Computers	Count	0	1	0	0	0	0	25	26
		% of Total	.0%	.3%	.0%	.0%	.0%	.0%	6.3%	6.6%
	Lawers	Count	0	0	0	0	0	0	7	7
		% of Total	.0%	.0%	.0%	.0%	.0%	.0%	1.8%	1.8%
	Lecutures	Count	0	0	0	0	0	0	36	36
		% of Total	.0%	.0%	.0%	.0%	.0%	.0%	9.1%	9.1%
	Workers	Count	1	0	0	0	0	0	5	6
		% of Total	.3%	.0%	.0%	.0%	.0%	.0%	1.3%	1.5%
	Venders	Count	0	0	1	2	0	0	19	22
		% of Total	.0%	.0%	.3%	.5%	.0%	.0%	4.8%	5.6%
	Policmen	Count	0	0	0	0	0	0	1	1
		% of Total	.0%	.0%	.0%	.0%	.0%	.0%	.3%	.3%
	Farmers	Count	0	0	0	0	0	0	1	1
		% of Total	.0%	.0%	.0%	.0%	.0%	.0%	.3%	.3%
	Unemployed	Count	0	0	0	0	0	0	17	17
		% of Total	.0%	.0%	.0%	.0%	.0%	.0%	4.3%	4.3%
	Others	Count	9	0	0	2	0	1	96	108
		% of Total	2.3%	.0%	.0%	.5%	.0%	.3%	24.2%	27.3%
Total		Count	16	4	1	4	1	1	369	396
		% of Total	4.0%	1.0%	.3%	1.0%	.3%	.3%	93.2%	100.0%

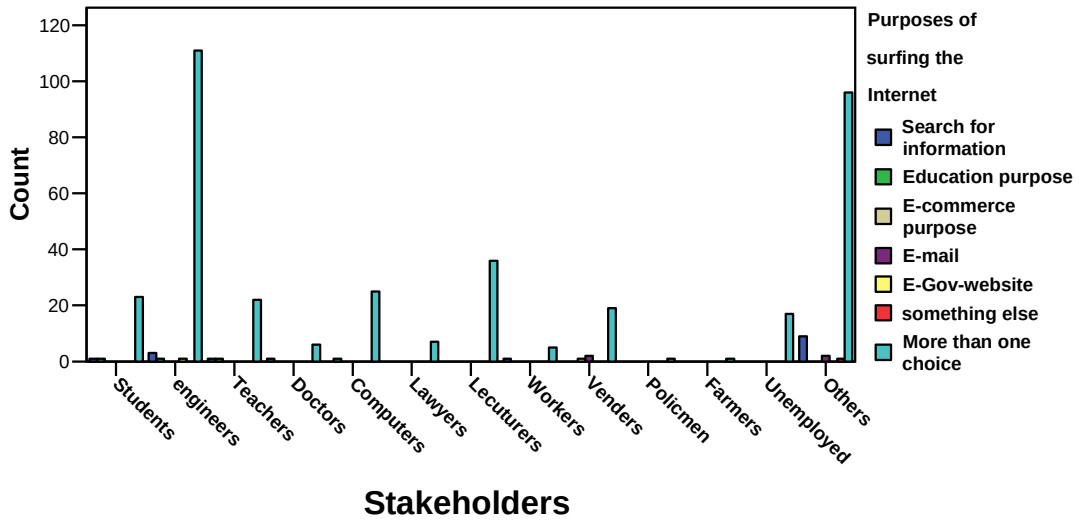

Chart 8: Purposes of surfing the Internet

From the results above, it is obvious that a quite reasonable number (93.2%) of stakeholders are using Internet and only more than a quarter of them with an intention of visiting e-government website(s) as one of various interests of theirs.

Q8. Compatibility of using Internet with lifestyle (See Table 12)

Table 12: compatibility of using Internet with lifestyle

Stakeholders * compatibility of Internet with lifestyle

			compatibility of Internet with lifestyle					
			Not compatible	Less than average	Average	More than average	Very compatible	Total
Stakeholders	Students	Count	2	3	4	5	11	25
		% of Total	.5%	.8%	1.0%	1.3%	2.8%	6.3%
	engineers	Count	6	6	24	32	48	116
		% of Total	1.5%	1.5%	6.1%	8.1%	12.2%	29.4%
	Teachers	Count	5	3	5	3	8	24
		% of Total	1.3%	.8%	1.3%	.8%	2.0%	6.1%
	Doctors	Count	0	0	3	0	4	7
		% of Total	.0%	.0%	.8%	.0%	1.0%	1.8%
	Computers	Count	1	4	9	3	9	26
		% of Total	.3%	1.0%	2.3%	.8%	2.3%	6.6%
	Lawyers	Count	0	0	4	0	3	7
		% of Total	.0%	.0%	1.0%	.0%	.8%	1.8%
	Lecuturers	Count	3	3	7	12	10	35
		% of Total	.8%	.8%	1.8%	3.0%	2.5%	8.9%
	Workers	Count	2	1	2	1	0	6
		% of Total	.5%	.3%	.5%	.3%	.0%	1.5%
	Venders	Count	1	1	3	2	15	22
		% of Total	.3%	.3%	.8%	.5%	3.8%	5.6%
	Policmen	Count	0	0	0	0	1	1
		% of Total	.0%	.0%	.0%	.0%	.3%	.3%
	Farmers	Count	1	0	0	0	0	1
		% of Total	.3%	.0%	.0%	.0%	.0%	.3%
	Unemployed	Count	3	1	5	3	5	17
		% of Total	.8%	.3%	1.3%	.8%	1.3%	4.3%
	Others	Count	7	8	32	22	39	108
		% of Total	1.8%	2.0%	8.1%	5.6%	9.9%	27.3%
Total		Count	31	30	98	83	153	395
		% of Total	7.8%	7.6%	24.8%	21.0%	38.7%	100.0%

The results above signify that internet, for most of the participants, has become part of their lifestyle. Internet-usage is considered as part of life. Very few of the participants belong to the "less than average" category and nearly equivalent number to the "Not-compatible" category.

Q9. Cost as a barrier using Internet (See Table 13)

Table 13: cost as a barrier using Internet

Stakeholders * cost as a barrier using internet

			cost as a barrier using internet					
			Not barriers me	Little	Average	More barriers me	Very barriers	Total
Stakeholders	Students	Count	10	4	5	2	4	25
		% of Total	2.5%	1.0%	1.3%	.5%	1.0%	6.3%
	engineers	Count	23	12	27	24	30	116
		% of Total	5.8%	3.0%	6.8%	6.1%	7.6%	29.4%
	Teachers	Count	8	4	6	1	5	24
		% of Total	2.0%	1.0%	1.5%	.3%	1.3%	6.1%
	Doctors	Count	1	0	2	2	2	7
		% of Total	.3%	.0%	.5%	.5%	.5%	1.8%
	Computers	Count	6	4	2	4	10	26
		% of Total	1.5%	1.0%	.5%	1.0%	2.5%	6.6%
	Lawyers	Count	1	1	0	4	1	7
		% of Total	.3%	.3%	.0%	1.0%	.3%	1.8%
	Lecuturers	Count	5	3	9	7	12	36
		% of Total	1.3%	.8%	2.3%	1.8%	3.0%	9.1%
	Workers	Count	1	0	1	0	3	5
		% of Total	.3%	.0%	.3%	.0%	.8%	1.3%
	Venders	Count	10	4	4	2	2	22
		% of Total	2.5%	1.0%	1.0%	.5%	.5%	5.6%
	Policmen	Count	1	0	0	0	0	1
		% of Total	.3%	.0%	.0%	.0%	.0%	.3%
	Farmers	Count	1	0	0	0	0	1
		% of Total	.3%	.0%	.0%	.0%	.0%	.3%
	Unemployed	Count	3	2	2	0	10	17
		% of Total	.8%	.5%	.5%	.0%	2.5%	4.3%
	Others	Count	18	18	18	18	36	108
		% of Total	4.6%	4.6%	4.6%	4.6%	9.1%	27.3%
Total		Count	88	52	76	64	115	395
		% of Total	22.3%	13.2%	19.2%	16.2%	29.1%	100.0%

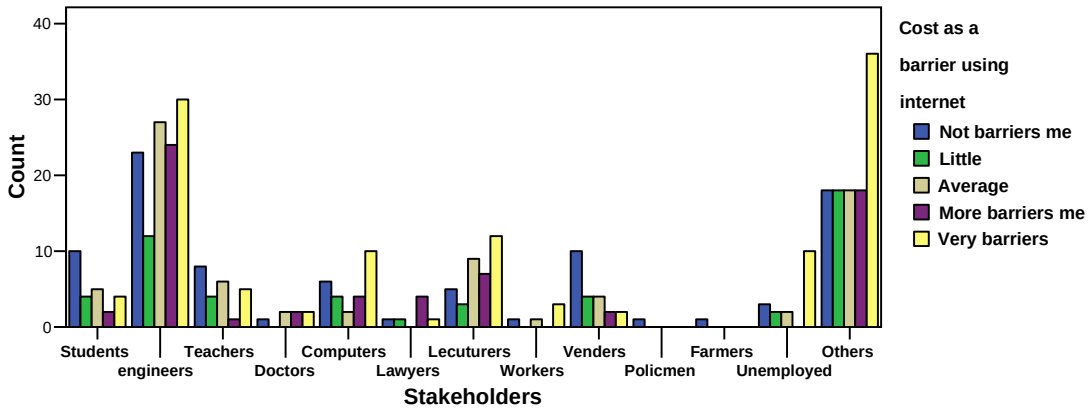

Chart 9: cost as barrier using Internet

The table and chart above proved that major chunk of participants are forced to refrain from using the internet due to its access-cost. Only less than third said that the access-cost does not form a barrier for them. That indicates why in the previous table; a significant number of participants are using the Internet for less than two hours.

Q10. **Awareness of e-government services** (See Table 14)

Table 14: awareness of e-government services

Stakeholders * awarence of e-government services

			awarence of e-government services		
			Yes	No	Total
Stakeholders	Students	Count	17	8	25
		% of Total	4.3%	2.0%	6.3%
	engineers	Count	105	11	116
		% of Total	26.6%	2.8%	29.4%
	Teachers	Count	21	3	24
		% of Total	5.3%	.8%	6.1%
	Doctors	Count	7	0	7
		% of Total	1.8%	.0%	1.8%
	Computers	Count	20	6	26
		% of Total	5.1%	1.5%	6.6%
	Lawyers	Count	7	0	7
		% of Total	1.8%	.0%	1.8%
	Lecuturers	Count	32	3	35
		% of Total	8.1%	.8%	8.9%
	Workers	Count	5	1	6
		% of Total	1.3%	.3%	1.5%
	Venders	Count	18	4	22
		% of Total	4.6%	1.0%	5.6%
	Policmen	Count	0	1	1
		% of Total	.0%	.3%	.3%
	Farmers	Count	1	0	1
		% of Total	.3%	.0%	.3%
	Unemployed	Count	12	5	17
		% of Total	3.0%	1.3%	4.3%
	Others	Count	87	21	108
		% of Total	22.0%	5.3%	27.3%
Total		Count	332	63	395
		% of Total	84.1%	15.9%	100.0%

A significant number of participants proved to be aware of e-government services, in respect of each stakeholder (see table and chart above), due to the accessibility to computers and Internet. Less than sixteen percent showed to be unaware of e-government services, which is very small number.

Q11. **Visiting e-government website** (See Table 15)

Table 15: Visiting e-government website

Stakeholders * visiting e-government website before

			visiting e-government website before		
			Yes	No	Total
Stakeholders	Students	Count	9	16	25
		% of Total	2.3%	4.1%	6.3%
	engineers	Count	48	68	116
		% of Total	12.2%	17.2%	29.4%
	Teachers	Count	16	8	24
		% of Total	4.1%	2.0%	6.1%
	Doctors	Count	3	4	7
		% of Total	.8%	1.0%	1.8%
	Computers	Count	10	15	25
		% of Total	2.5%	3.8%	6.3%
	Lawyers	Count	5	2	7
		% of Total	1.3%	.5%	1.8%
	Lecuturers	Count	22	14	36
		% of Total	5.6%	3.5%	9.1%
	Workers	Count	2	4	6
		% of Total	.5%	1.0%	1.5%
	Venders	Count	10	12	22
		% of Total	2.5%	3.0%	5.6%
	Policmen	Count	1	0	1
		% of Total	.3%	.0%	.3%
	Farmers	Count	1	0	1
		% of Total	.3%	.0%	.3%
	Unemployed	Count	9	8	17
		% of Total	2.3%	2.0%	4.3%
	Others	Count	50	58	108
		% of Total	12.7%	14.7%	27.3%
Total		Count	186	209	395
		% of Total	47.1%	52.9%	100.0%

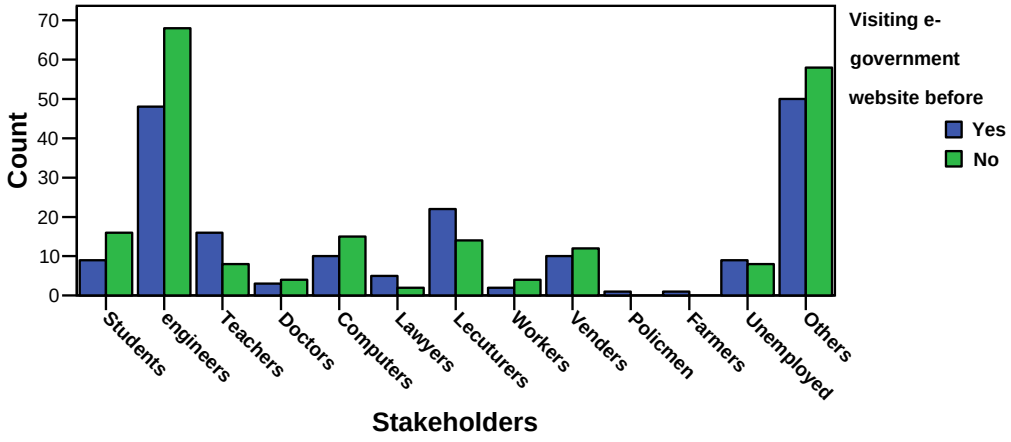

Chart 10: Visiting e-government website

The table above confirms that, still vast number of participants (more than half) was not visiting e-government website before, in respect of each stakeholder. This proves that their awareness of e-government is relatively immature.

Q12. Readiness for using e-government website, if you got fitting/proper courses (See Table 16)

Table 16: Readiness for using e-government website if you got fitting course

Stakeholders * readiness for using e-Government websites if you got fitting courses

			readiness for using e-Government websites if you got fitting courses					
			Not ready	Littel	Average	Almost ready	Ready to use it	Total
Stakeholders	Students	Count	3	1	3	7	11	25
		% of Total	.8%	.3%	.8%	1.8%	2.8%	6.3%
	engineers	Count	14	1	25	14	62	116
		% of Total	3.5%	.3%	6.3%	3.5%	15.7%	29.3%
	Teachers	Count	8	0	2	1	13	24
		% of Total	2.0%	.0%	.5%	.3%	3.3%	6.1%
	Doctors	Count	0	0	1	3	3	7
		% of Total	.0%	.0%	.3%	.8%	.8%	1.8%
	Computers	Count	3	0	8	2	13	26
		% of Total	.8%	.0%	2.0%	.5%	3.3%	6.6%
	Lawyers	Count	0	0	2	3	2	7
		% of Total	.0%	.0%	.5%	.8%	.5%	1.8%
	Lecuturers	Count	5	2	4	3	22	36
		% of Total	1.3%	.5%	1.0%	.8%	5.6%	9.1%
	Workers	Count	0	0	1	0	5	6
		% of Total	.0%	.0%	.3%	.0%	1.3%	1.5%
	Venders	Count	1	2	6	3	10	22
		% of Total	.3%	.5%	1.5%	.8%	2.5%	5.6%
	Policmen	Count	0	0	0	0	1	1
		% of Total	.0%	.0%	.0%	.0%	.3%	.3%
	Farmers	Count	0	1	0	0	0	1
		% of Total	.0%	.3%	.0%	.0%	.0%	.3%
	Unemployed	Count	2	0	1	2	12	17
		% of Total	.5%	.0%	.3%	.5%	3.0%	4.3%
	Others	Count	20	2	11	8	67	108
		% of Total	5.1%	.5%	2.8%	2.0%	16.9%	27.3%
Total		Count	56	9	64	46	221	396
		% of Total	14.1%	2.3%	16.2%	11.6%	55.8%	100.0%

Most of the participants are willing to use e-government website if the government offer the proper course for that, in respect of each stakeholders, that demonstrated in the above table and chart. In addition, it represents that only few participants still not/little ready to use e-government website. That will be added to the finding as it was shown before that, the cost of internet has an effected on the use of e-government services for certain groups of stakeholders as mentioned above. However, the rest of the stakeholders who contributed less

in this online survey, they have deeper problems which is the Internet related infrastructures. So if the government reduce the access-cost of the Internet as it barrier stakeholders from using Internet more often, and improve other infrastructures related issues, accordingly public can access to e-government website easily, less costly

Q13. The necessity of e-government services (using traditional way or e-way) (See Table 17)

Table 17: the necessity of e-government services (using tradition way or e-way)

Stakeholders * the necessity of e-government services, (using tradition way or e-way)

			the necessity of e-government services, (using tradition way or e-way)				
			Significant	Not significant	Average	I do not know	Total
Stakeholders	Students	Count	3	2	12	8	25
		% of Total	.8%	.5%	3.0%	2.0%	6.3%
	engineers	Count	10	4	62	40	116
		% of Total	2.5%	1.0%	15.7%	10.1%	29.3%
	Teachers	Count	2	0	10	12	24
		% of Total	.5%	.0%	2.5%	3.0%	6.1%
	Doctors	Count	0	0	2	5	7
		% of Total	.0%	.0%	.5%	1.3%	1.8%
	Computers	Count	3	2	10	11	26
		% of Total	.8%	.5%	2.5%	2.8%	6.6%
	Lawyers	Count	0	0	1	6	7
		% of Total	.0%	.0%	.3%	1.5%	1.8%
	Lecuturers	Count	7	1	17	11	36
		% of Total	1.8%	.3%	4.3%	2.8%	9.1%
	Workers	Count	2	0	2	2	6
		% of Total	.5%	.0%	.5%	.5%	1.5%
	Venders	Count	0	2	10	10	22
		% of Total	.0%	.5%	2.5%	2.5%	5.6%
	Policmen	Count	0	0	0	1	1
		% of Total	.0%	.0%	.0%	.3%	.3%
	Farmers	Count	0	0	0	1	1
		% of Total	.0%	.0%	.0%	.3%	.3%
	Unemployed	Count	4	1	5	7	17
		% of Total	1.0%	.3%	1.3%	1.8%	4.3%
	Others	Count	14	0	49	45	108
		% of Total	3.5%	.0%	12.4%	11.4%	27.3%
Total		Count	45	12	180	159	396
		% of Total	11.4%	3.0%	45.5%	40.2%	100.0%

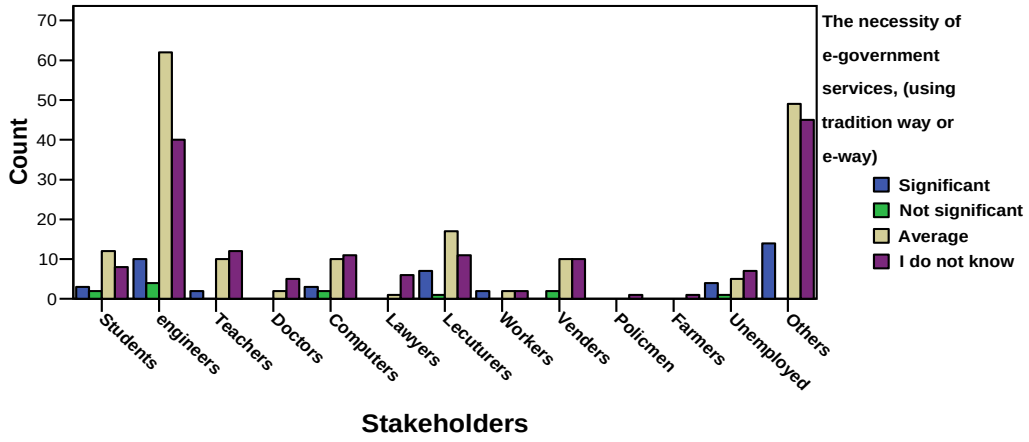

Chart 11: The necessity of e-government services (using tradition way or e-way)

The table and chart above reveal that, a substantial numbers of participants have no idea about the necessity of e-government services, and that because their knowledge of them are relatively new, and also because of the high cost of the Internet access, as it was mentioned above this limited the period of average use of it. Also, most of their activities during these two hours of access are using e-mail, search for information, education purposes, and other things. This limited time has affected them from surfing more website to find out about e-government, in respect of all stakeholders. In addition, very few think this necessity of services is not significant. While, still a reasonably slight figure of more than half of the participants believe that there is a necessity for the e-government services which mean that e-government offer necessity services, but these services are not used by the public either because they cannot reach them or they have no time to use them. That is apart from policemen and farmer group who almost have an idea that leads people to do not contribute or believes in e-government services, even though they have access to e-government website.

Q14. Has e-government services developed enough (See Table 18)

Table 18: has e-government services developed enough

Stakeholders * e-government services developed enough

			e-government services developed enough					
			It needs a little	It needs little more	Average	It should be more developed	It needs totality developed	Total
Stakeholders	Students	Count	1	1	6	8	9	25
		% of Total	.3%	.3%	1.5%	2.0%	2.3%	6.3%
	engineers	Count	5	8	35	20	48	116
		% of Total	1.3%	2.0%	8.8%	5.1%	12.1%	29.3%
	Teachers	Count	2	1	5	3	13	24
		% of Total	.5%	.3%	1.3%	.8%	3.3%	6.1%
	Doctors	Count	0	1	1	2	3	7
		% of Total	.0%	.3%	.3%	.5%	.8%	1.8%
	Computers	Count	3	3	4	1	15	26
		% of Total	.8%	.8%	1.0%	.3%	3.8%	6.6%
	Lawyers	Count	0	1	1	3	2	7
		% of Total	.0%	.3%	.3%	.8%	.5%	1.8%
	Lecuturers	Count	2	2	16	5	11	36
		% of Total	.5%	.5%	4.0%	1.3%	2.8%	9.1%
	Workers	Count	0	0	1	1	4	6
		% of Total	.0%	.0%	.3%	.3%	1.0%	1.5%
	Venders	Count	2	0	5	5	10	22
		% of Total	.5%	.0%	1.3%	1.3%	2.5%	5.6%
	Policmen	Count	0	0	0	0	1	1
		% of Total	.0%	.0%	.0%	.0%	.3%	.3%
	Farmers	Count	0	0	1	0	0	1
		% of Total	.0%	.0%	.3%	.0%	.0%	.3%
	Unemployed	Count	2	2	1	3	9	17
		% of Total	.5%	.5%	.3%	.8%	2.3%	4.3%
	Others	Count	7	5	21	25	50	108
		% of Total	1.8%	1.3%	5.3%	6.3%	12.6%	27.3%
Total		Count	24	24	97	76	175	396
		% of Total	6.1%	6.1%	24.5%	19.2%	44.2%	100.0%

Still extensive numbers of participants nearly half of them think that e-government services need total development, in respect of each stakeholder, that is confirmed in the above table and chart. What is more, about twenty percent think that it should be more developed, and very few agree that it needs only little development. That indicate that e-government do not provide good services to the common public.

Q15. **Does usage of e-government services appropriate with lifestyle)** (See Table 19)

Table 19: usage of e-government services appropriate with lifestyle

Stakeholders * usage of e-government services appropriate with lifestyle

			usage of e-government services appropriate with lifestyle				
			Yes	No	Average	I do not know	Total
Stakeholders	Students	Count	3	6	16	0	25
		% of Total	.8%	1.5%	4.0%	.0%	6.3%
	engineers	Count	13	35	68	0	116
		% of Total	3.3%	8.8%	17.2%	.0%	29.3%
	Teachers	Count	2	8	14	0	24
		% of Total	.5%	2.0%	3.5%	.0%	6.1%
	Doctors	Count	0	3	4	0	7
		% of Total	.0%	.8%	1.0%	.0%	1.8%
	Computers	Count	2	6	18	0	26
		% of Total	.5%	1.5%	4.5%	.0%	6.6%
	Lawyers	Count	1	3	3	0	7
		% of Total	.3%	.8%	.8%	.0%	1.8%
	Lecuturers	Count	6	13	17	0	36
		% of Total	1.5%	3.3%	4.3%	.0%	9.1%
	Workers	Count	1	1	4	0	6
		% of Total	.3%	.3%	1.0%	.0%	1.5%
	Venders	Count	5	8	9	0	22
		% of Total	1.3%	2.0%	2.3%	.0%	5.6%
	Policmen	Count	1	0	0	0	1
		% of Total	.3%	.0%	.0%	.0%	.3%
	Farmers	Count	0	1	0	0	1
		% of Total	.0%	.3%	.0%	.0%	.3%
	Unemployed	Count	1	5	11	0	17
		% of Total	.3%	1.3%	2.8%	.0%	4.3%
	Others	Count	23	21	63	1	108
		% of Total	5.8%	5.3%	15.9%	.3%	27.3%
Total		Count	58	110	227	1	396
		% of Total	14.6%	27.8%	57.3%	.3%	100.0%

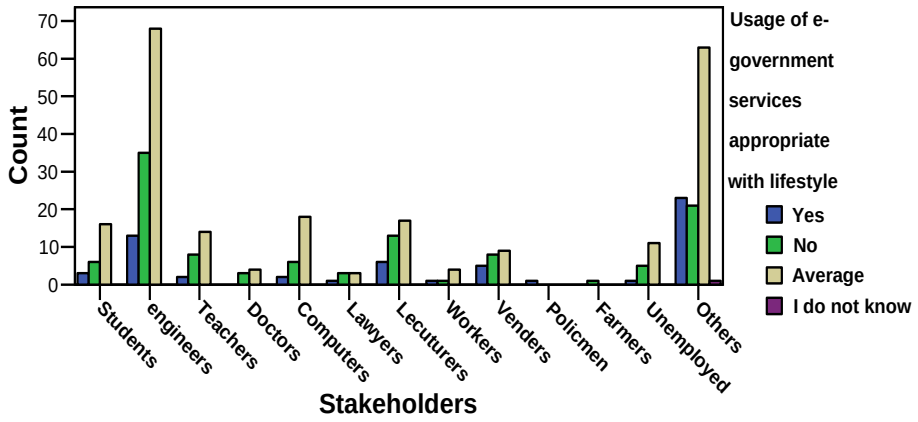

Chart 12: usage of e-government services appropriate with lifestyle

The above table and chart exhibits that, an important percentage of participants do agree that, e-government services are appropriate as an average with their lifestyle in respect

of stakeholders. Very few agree that it is totally appropriate. In contrast, nearly the third of them believe that it is utterly not.

Q16. Does the advantage of using e-government services justify its expenses? (See table20)

Table 20: does the advantage of using the e-government services justify its expenses

Stakeholders * Does the advantage of using the e-government justify its expenses

			Does the advantage of using the e-government justify its expenses			
			Suitable advantages	Non advantages	Average advantages	Total
Stakeholders	Students	Count	7	3	15	25
		% of Total	1.8%	.8%	3.8%	6.3%
	engineers	Count	17	13	86	116
		% of Total	4.3%	3.3%	21.7%	29.3%
	Teachers	Count	3	2	19	24
		% of Total	.8%	.5%	4.8%	6.1%
	Doctors	Count	0	0	7	7
		% of Total	.0%	.0%	1.8%	1.8%
	Computers	Count	2	1	23	26
		% of Total	.5%	.3%	5.8%	6.6%
	Lawyers	Count	0	0	7	7
		% of Total	.0%	.0%	1.8%	1.8%
	Lecuturers	Count	5	0	31	36
		% of Total	1.3%	.0%	7.8%	9.1%
	Workers	Count	2	0	4	6
		% of Total	.5%	.0%	1.0%	1.5%
	Venders	Count	2	1	19	22
		% of Total	.5%	.3%	4.8%	5.6%
	Policmen	Count	1	0	0	1
		% of Total	.3%	.0%	.0%	.3%
	Farmers	Count	1	0	0	1
		% of Total	.3%	.0%	.0%	.3%
	Unemployed	Count	1	2	14	17
		% of Total	.3%	.5%	3.5%	4.3%
	Others	Count	12	7	89	108
		% of Total	3.0%	1.8%	22.5%	27.3%
Total		Count	53	29	314	396
		% of Total	13.4%	7.3%	79.3%	100.0%

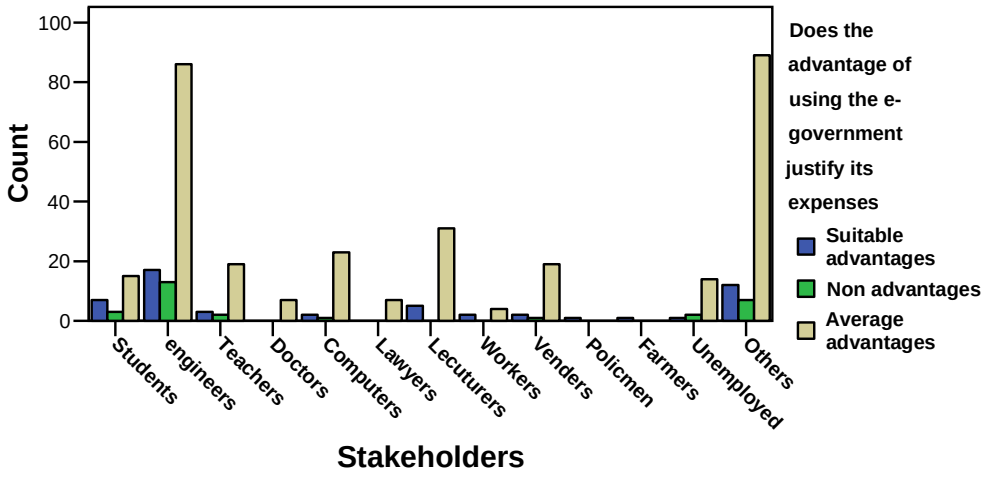

Chart13: does the advantage for using e-government services justify its expenses

Nearly the entire stakeholders do agree that it is only average advantage. Very few believe it is suitable advantage, (see table and chart above); because, the everyday costs of using Internet services in general do not justify its expenses. On the contrary, for this segment of common public (most of the stakeholders) using e-government website in particular is justifying its expenses as they do not visit it so often. Thus the high cost of Internet services hinders the public and forms a barrier for the public to interact with e-government and discourages the use of its services.

Q17. Current e-government introduces full necessity service (See Table 21)

Table 21: does current e-government introduce full necessity service

Stakeholders * Does current e-government introduce full necessity services

			Does current e-government introduce full necessity services			
			Yes	No	Average of services	Total
Stakeholders	Students	Count	3	20	2	25
		% of Total	.8%	5.1%	.5%	6.3%
	engineers	Count	7	92	17	116
		% of Total	1.8%	23.2%	4.3%	29.3%
	Teachers	Count	2	17	5	24
		% of Total	.5%	4.3%	1.3%	6.1%
	Doctors	Count	0	6	1	7
		% of Total	.0%	1.5%	.3%	1.8%
	Computers	Count	2	18	6	26
		% of Total	.5%	4.5%	1.5%	6.6%
	Lawyers	Count	1	6	0	7
		% of Total	.3%	1.5%	.0%	1.8%
	Lecuturers	Count	6	26	4	36
		% of Total	1.5%	6.6%	1.0%	9.1%
	Workers	Count	0	5	1	6
		% of Total	.0%	1.3%	.3%	1.5%
	Venders	Count	0	16	6	22
		% of Total	.0%	4.0%	1.5%	5.6%
	Policmen	Count	0	1	0	1
		% of Total	.0%	.3%	.0%	.3%
	Farmers	Count	0	1	0	1
		% of Total	.0%	.3%	.0%	.3%
	Unemployed	Count	0	16	1	17
		% of Total	.0%	4.0%	.3%	4.3%
	Others	Count	14	84	10	108
		% of Total	3.5%	21.2%	2.5%	27.3%
Total		Count	35	308	53	396
		% of Total	8.8%	77.8%	13.4%	100.0%

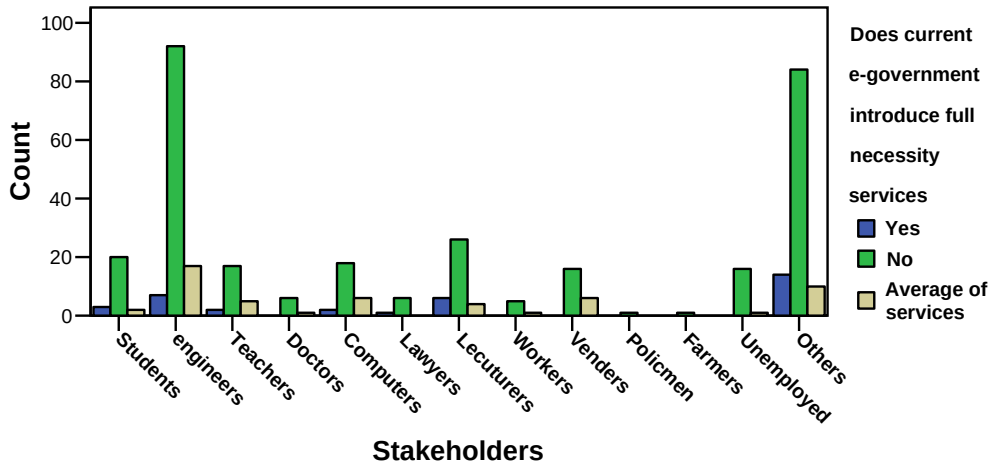

Chart 14: does current e-government introduce full necessity service

Insignificant number of participants agrees that there is a necessity services introduced by e-government. While, a very significant number of the participants think that the e-government does not introduce a necessity service via its website. Again, unremarkable number (less than fourteen percent) of participants agrees that there is an average of services.

APPENDIX B: analysis of data collected from the paper-based questionnaires

We distributed equal number of questionnaires to the above mentioned groups. Thus the number of questionnaires distributed to every stakeholder was fifty (50). Below are the findings in respect of each piece of information contained in the questionnaires and results are shown through cross tabulations and bar charts

1. Personal Information:

Gender (See Table 1)

Table 1: Gender distribution

Stakeholders * Gender

			Gender		
			Male	Female	Total
Stakeholders	Students	Count	43	7	50
		% of Total	28.7%	4.7%	33.3%
	Experts	Count	44	6	50
		% of Total	29.3%	4.0%	33.3%
	Farmers	Count	50	0	50
		% of Total	33.3%	.0%	33.3%
Total		Count	137	13	150
		% of Total	91.3%	8.7%	100.0%

It can be seen from the table 1, that most of the stakeholders' gender is male and small female group participates in this survey.

Cities (See Table 2)

Table 2: Cities Distribution

Stakeholders * Cities

			Cities										
			Garian	Zawia	Moerzeg	Tripoli	Banghazi	Zliten	Mousrath	Dernh	Sabha	Nalout	Total
Stakeholde	**Students**	Count	5	5	5	5	5	5	5	5	5	5	50
		% of Tota	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	33.3%
	Experts	Count	5	5	5	5	5	5	5	5	5	5	50
		% of Tota	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	33.3%
	Farmers	Count	5	5	5	5	5	5	5	5	5	5	50
		% of Tota	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	33.3%
Total		Count	15	15	15	15	15	15	15	15	15	15	150
		% of Tota	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	100.0%

Chart 1: Cities Distribution

We can see in the table 2, that the questionnaires are distributed in equal numbers to every city stated in the table in respect to each stakeholder, 5 for each one, to give a total of 15 in every city.

Age Distribution (See Table 3)

Table 3: Age Distribution

Stakeholders * Age

			Age							
			less than 18	19 to 25	26 to 35	36 to 45	46 to 55	56 to 65	over 66	Total
Stakeholders	Students	Count	5	40	5	0	0	0	0	50
		% of Total	3.3%	26.7%	3.3%	.0%	.0%	.0%	.0%	33.3%
	Experts	Count	0	3	8	17	16	6	0	50
		% of Total	.0%	2.0%	5.3%	11.3%	10.7%	4.0%	.0%	33.3%
	Farmers	Count	0	0	0	1	3	12	34	50
		% of Total	.0%	.0%	.0%	.7%	2.0%	8.0%	22.7%	33.3%
Total		Count	5	43	13	18	19	18	34	150
		% of Total	3.3%	28.7%	8.7%	12.0%	12.7%	12.0%	22.7%	100.0%

Education Distribution (See Table 4)

Table 4: Education Distribution

Stakeholders * Education

			Education						
			not educated	primary school	secondary school	Technical education	degree	Sharia(religious education)	Total
Stakeholders	Students	Count	0	0	50	0	0	0	50
		% of Total	.0%	.0%	33.3%	.0%	.0%	.0%	33.3%
	Experts	Count	0	0	0	0	50	0	50
		% of Total	.0%	.0%	.0%	.0%	33.3%	.0%	33.3%
	Farmers	Count	16	14	7	1	0	12	50
		% of Total	10.7%	9.3%	4.7%	.7%	.0%	8.0%	33.3%
Total		Count	16	14	57	1	50	12	150
		% of Total	10.7%	9.3%	38.0%	.7%	33.3%	8.0%	100.0%

2. Subject (e-government) information:

The analysis of the main questions that makes up the survey

Q1. **English skills** (See Table 5)

Table 5: English skills

Stakeholders * English Skills

			English Skills		
			Yes	No	Total
Stakeholders	Students	Count	42	8	50
		% of Total	28.0%	5.3%	33.3%
	Experts	Count	35	15	50
		% of Total	23.3%	10.0%	33.3%
	Farmers	Count	47	3	50
		% of Total	31.3%	2.0%	33.3%
Total		Count	124	26	150
		% of Total	82.7%	17.3%	100.0%

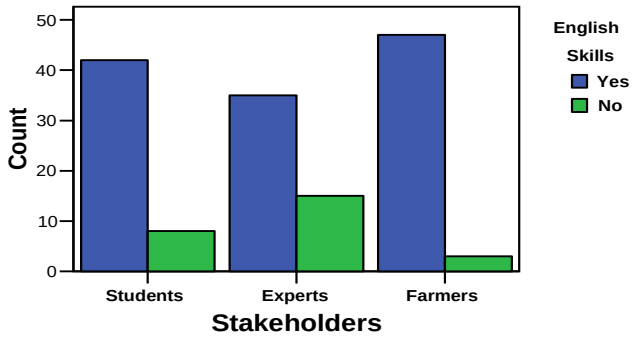

Chart 2: English skills

It can be seen from the above table 5 and chart 5 that there are a significant number of participants who knew the English language.

Q2. **Computer skills** (See Table 6)

Table 6: Computer skills

Stakeholders * Computer Skills

			Computer Skills						
			Non user	beginner	basic	average	more than average	advanced	Total
Stakeholders	Students	Count	20	12	9	6	2	1	50
		% of Total	13.3%	8.0%	6.0%	4.0%	1.3%	.7%	33.3%
	Experts	Count	25	16	7	2	0	0	50
		% of Total	16.7%	10.7%	4.7%	1.3%	.0%	.0%	33.3%
	Farmers	Count	48	2	0	0	0	0	50
		% of Total	32.0%	1.3%	.0%	.0%	.0%	.0%	33.3%
Total		Count	93	30	16	8	2	1	150
		% of Total	62.0%	20.0%	10.7%	5.3%	1.3%	.7%	100.0%

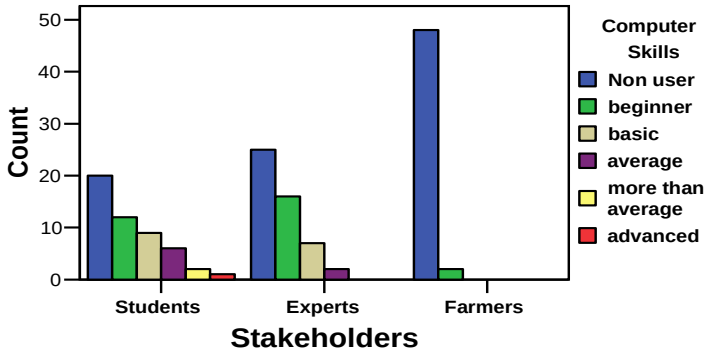

Chart 3: Computer skills

The results on Computer Skills indicate that the majority of the participants have no computer skills and twenty percent of them are just beginners. This proves that, in Libya, the infrastructure of the computer literacy is neither available or it has negligible presence. This is, I reckon, due to the high price of computer equipment/computer courses.

Q3. Where usually using Internet (See Table 7)

Table 7: Where participant usually using Internet

Stakeholders * Where usually using Internet

			Where usually using Internet				
			Non user	At School	Coffee Net	More than one choice	Total
Stakeholders	Students	Count	20	8	19	3	50
		% of Total	13.3%	5.3%	12.7%	2.0%	33.3%
	Experts	Count	25	0	21	4	50
		% of Total	16.7%	.0%	14.0%	2.7%	33.3%
	Farmers	Count	48	0	0	2	50
		% of Total	32.0%	.0%	.0%	1.3%	33.3%
Total		Count	93	8	40	9	150
		% of Total	62.0%	5.3%	26.7%	6.0%	100.0%

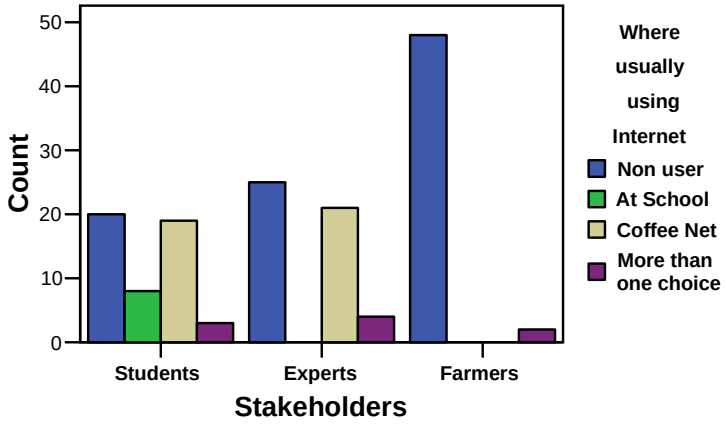

Chart 4: Where participant usually using Internet

From the above table and chart, it is clear that the largest part of participants is non Internet users in respect of each stakeholder. We find that twenty six percent of the participants are using Internet cafes and none of the participants uses internet at home or at work. It implies that they cannot have regular access to Internet and therefore no access to e-government website. This is due to the lack of landline phones which do not exist in every home. More to the point, the non-possession of the computers by most of the participants does lead to less use of internet. Consequently, not most of the participants can access the e-governments' website easily.

Q4. Period since first use of Internet (See table 8)

Table 8: Period since first use of Internet

Stakeholders * Period since first use if Internet

			Period since first use if Internet			
			2 to 5 years	Less then 2 years	Non user	Total
Stakeholders	Students	Count	6	24	20	50
		% of Total	4.0%	16.0%	13.3%	33.3%
	Experts	Count	4	21	25	50
		% of Total	2.7%	14.0%	16.7%	33.3%
	Farmers	Count	0	2	48	50
		% of Total	.0%	1.3%	32.0%	33.3%
Total		Count	10	47	93	150
		% of Total	6.7%	31.3%	62.0%	100.0%

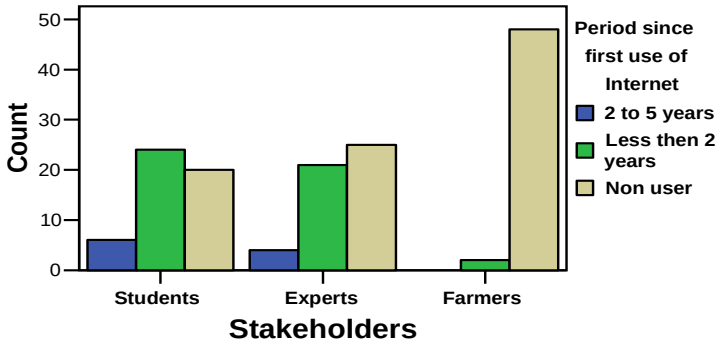

Chart 5: Period since first use of Internet

From the above it is again clear that most of the participants are non-users of internet. Among those who use it, have started using it quite recently and most of them belong to 1-2 years category. This can be attributed to lack of infrastructure and late introduction of provision of internet. Therefore, there is no significant access to e-government website.

Q5. Frequency of using Internet (See Table 9)

Table 9: Frequency of using Internet

Stakeholders * Frequencey of using Internet

			Frequency of using Internet				
			None	Once a month	Once a week	3 to 4 times a week	Total
Stakeholders	Students	Count	20	4	6	20	50
		% of Total	13.3%	2.7%	4.0%	13.3%	33.3%
	Experts	Count	25	9	13	3	50
		% of Total	16.7%	6.0%	8.7%	2.0%	33.3%
	Farmers	Count	48	1	1	0	50
		% of Total	32.0%	.7%	.7%	.0%	33.3%
Total		Count	93	14	20	23	150
		% of Total	62.0%	9.3%	13.3%	15.3%	100.0%

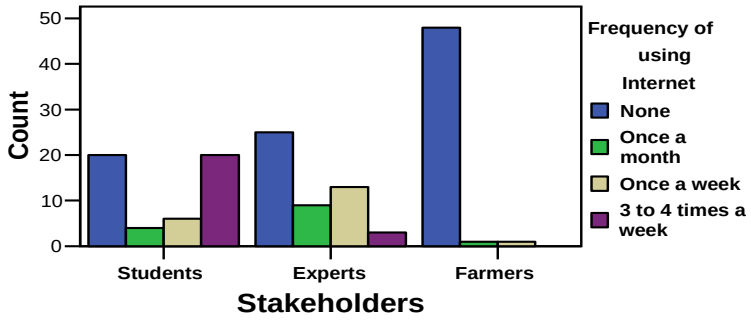

Chart 6: Frequency of using Internet

As the frequency statistics indicate that for most of the participants the usage frequency is zero. And very few of the participants belong to the high-frequency (3-4 times a week) category. Thus, most of them will not be having a chance to visit the e-Government site(s).

Q6. Period of average use of the Internet (See Table 10)

Table 10: Period of average use of the Internet

Stakeholders * Period of average use of the Internet

			Period of average use of the Internet			
			None	2 to 5 hours	Less than 2 hours	Total
Stakeholders	Students	Count	20	9	21	50
		% of Total	13.3%	6.0%	14.0%	33.3%
	Experts	Count	25	1	24	50
		% of Total	16.7%	.7%	16.0%	33.3%
	Farmers	Count	48	1	1	50
		% of Total	32.0%	.7%	.7%	33.3%
Total		Count	93	11	46	150
		% of Total	62.0%	7.3%	30.7%	100.0%

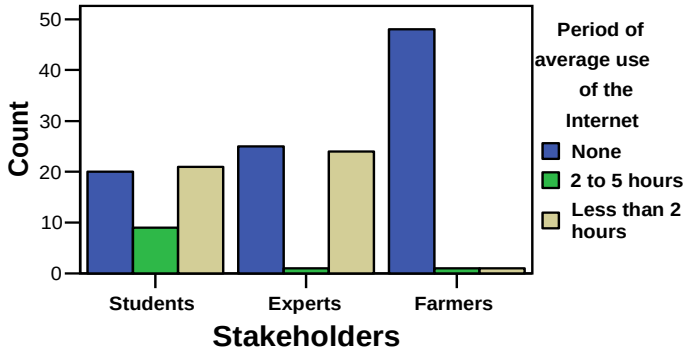

Chart 7: Period of average use of the Internet

Here again, we notice that very few of the participants belong to the high-use (2-5 hours) category. Non-users are plenty. And among those who use for less than two hours, there is a little chance that they'll use the Internet to access e-Government site(s) due to other interests of theirs.

Q7. **Purposes of surfing the Internet** (See Table 11)

Table 11: purposes of surfing the Internet

Stakeholders * Purposes of surfing the Internet

			Purposes of surfing the Internet						
			No activity	Search for information	Education purpose	Checking e-Gov-website	Something else	more than one choice.	Total
Stakeholders	Students	Count	20	3	13	0	0	14	50
		% of Total	13.3%	2.0%	8.7%	.0%	.0%	9.3%	33.3%
	Experts	Count	29	0	1	5	6	9	50
		% of Total	19.3%	.0%	.7%	3.3%	4.0%	6.0%	33.3%
	Farmers	Count	48	0	0	0	0	2	50
		% of Total	32.0%	.0%	.0%	.0%	.0%	1.3%	33.3%
Total		Count	97	3	14	5	6	25	150
		% of Total	64.7%	2.0%	9.3%	3.3%	4.0%	16.7%	100.0%

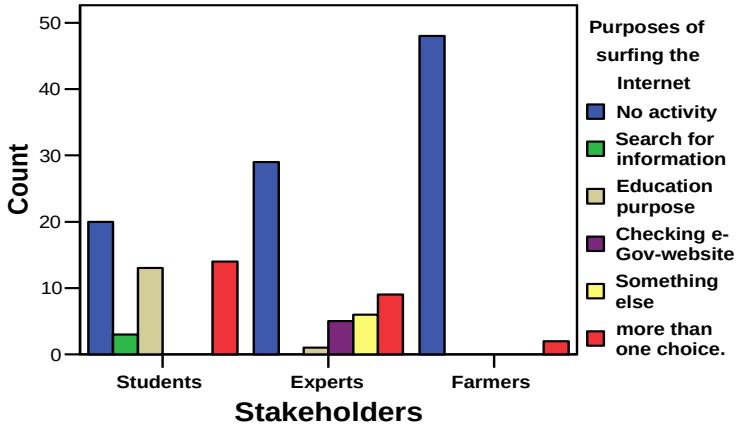

Chart 8: Purposes of surfing the Internet

From the results above, it is obvious that among those who do use the internet, very few are using it with a purpose of visiting e-government website(s).

Q8. Compatibility of using Internet with lifestyle (See Table 12)

Table 12: compatibility of using Internet with lifestyle

Stakeholders * compatibility (Internet) with life style

			compatibility (Internet) with life style					
			Not compatible	Less than average	Average	More than average	I don't Know what is it	Total
Stakeholders	Students	Count	13	22	14	1	0	50
		% of Total	8.7%	14.7%	9.3%	.7%	.0%	33.3%
	Experts	Count	6	10	6	3	25	50
		% of Total	4.0%	6.7%	4.0%	2.0%	16.7%	33.3%
	Farmers	Count	0	0	1	1	48	50
		% of Total	.0%	.0%	.7%	.7%	32.0%	33.3%
Total		Count	19	32	21	5	73	150
		% of Total	12.7%	21.3%	14.0%	3.3%	48.7%	100.0%

The results above indicate that internet, for most of the participants, has not become part of their lifestyle. Internet-usage is not considered as part of life. Very few of the participants belong to the "above-average" category.

Q9. Cost as a barrier using Internet (See Table 13)

Table 13: cost as a barrier using Internet

Stakeholders * cost as a barrier using internet

			cost as a barrier using internet		
			More barriers me	Very barriers	Total
Stakeholders	Students	Count	5	45	50
		% of Total	3.3%	30.0%	33.3%
	Experts	Count	0	50	50
		% of Total	.0%	33.3%	33.3%
	Farmers	Count	0	50	50
		% of Total	.0%	33.3%	33.3%
Total		Count	5	145	150
		% of Total	3.3%	96.7%	100.0%

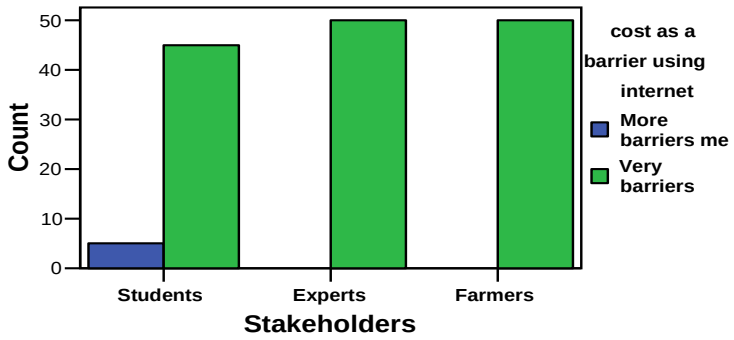

Chart 9: cost as barrier using Internet

The table and chart above indicate that major chunk of participants are forced to refrain from using the internet due to its access-cost.

Q10. **Awareness of e-government services** (See Table 14)

Table 14: awareness of e-government services

Stakeholders * awareness of e-goverment services

			awareness of e-government services		
			Yes	No	Total
Stakeholders	Students	Count	27	23	50
		% of Total	18.0%	15.3%	33.3%
	Experts	Count	24	26	50
		% of Total	16.0%	17.3%	33.3%
	Farmers	Count	2	48	50
		% of Total	1.3%	32.0%	33.3%
Total		Count	53	97	150
		% of Total	35.3%	64.7%	100.0%

Still huge number of participants (more than half) is not aware of e-government services, in respect of each stakeholder (see table and chart above). More than half of the students are proved to be aware of e-government services.

Q11. **Visiting e-government website** (See Table 15)

Table 15: Visiting e-government website

Stakeholders * visiting e-government website

			visiting e-government website		
			Yes	No	Total
Stakeholders	Students	Count	18	32	50
		% of Total	12.0%	21.3%	33.3%
	Experts	Count	15	35	50
		% of Total	10.0%	23.3%	33.3%
	Farmers	Count	2	48	50
		% of Total	1.3%	32.0%	33.3%
Total		Count	35	115	150
		% of Total	23.3%	76.7%	100.0%

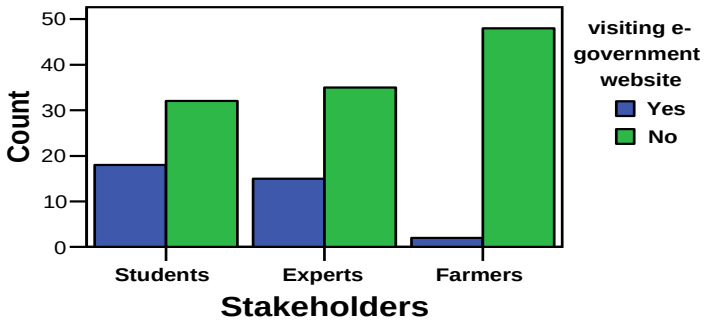

Chart 10: Visiting e-government website

The table above shows that, still vast number of participants (more than three quarter of them) is not visiting e-government website, in respect of each stakeholder. The farmers group is the group with a minimum of visits.

Q12. Readiness for using e-government website, if you got fitting courses (See Table 16)

Table 16: Readiness for using e-government website if you got fitting course

Stakeholders * Readiness for using e-Gov web sites if you got fitting courses

			Readiness for using e-Gov web sites if you got fitting courses					
			Not ready	Littel	Average	Almost ready	Ready to use it	Total
Stakeholders	Students	Count	1	0	4	10	35	50
		% of Total	.7%	.0%	2.7%	6.7%	23.3%	33.3%
	Experts	Count	0	0	5	3	42	50
		% of Total	.0%	.0%	3.3%	2.0%	28.0%	33.3%
	Farmers	Count	6	11	28	3	2	50
		% of Total	4.0%	7.3%	18.7%	2.0%	1.3%	33.3%
Total		Count	7	11	37	16	79	150
		% of Total	4.7%	7.3%	24.7%	10.7%	52.7%	100.0%

Most of the participants are willing to use e-government website if the government improve the infrastructures, accordingly public can access to e-government website easily, less costly, in respect of each stakeholders, that demonstrated in the above table and chart. In addition, it is represent that as merely few participants still not or not that much ready to use e-government website. That will be added to the finding as it was shown before that, the lack of computer literacy, availability and cost of internet all affected the use of e-government services.

Q13. The necessity of e-government services (using traditional way or e-way) (See Table 17)

Table 17: the necessity of e-government services (using tradition way or e-way)

Stakeholders * the necessity of e-government services, (using tradition way or e-way)

			the necessity of e-government services, (using tradition way or e-way)			
			Significant	Average	I dont know	Total
Stakeholders	Students	Count	6	11	33	50
		% of Total	4.0%	7.3%	22.0%	33.3%
	Experts	Count	2	23	25	50
		% of Total	1.3%	15.3%	16.7%	33.3%
	Farmers	Count	0	2	48	50
		% of Total	.0%	1.3%	32.0%	33.3%
Total		Count	8	36	106	150
		% of Total	5.3%	24.0%	70.7%	100.0%

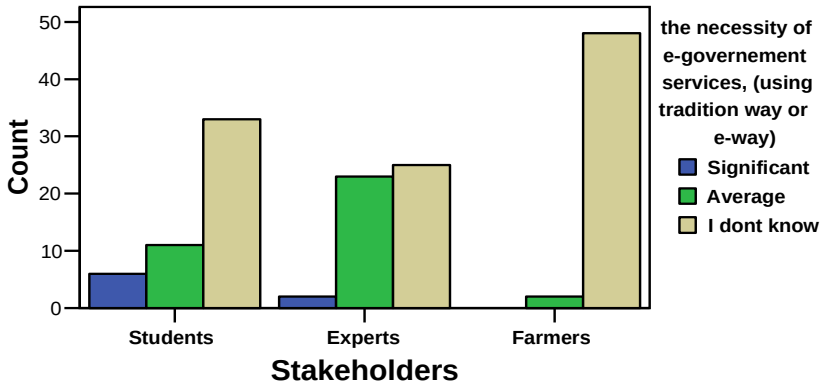

Chart 11: the necessity of e-government services (using tradition way or e-way)

The table and chart above signify that, a substantial numbers of participants have no idea about the necessity of e-government services, and that is due to the lack of awareness of technology and lack of Internet related infrastructures, in respect of all stakeholders. Conversely, only a slight figure of less than third of the participant believe that there is a necessity of the e-government services which mean that e-government offer necessity services, but with no use from the public as they cannot reach it. That is apart from farmer group who almost none of them has an idea that leads people not contribute or believe in e-government services.

Q14. Have e-government services developed enough (See Table 18)

Table 18: have e-government services developed enough

Stakeholders * e-government services developed enough

			e-government services developed enough				
			I do not know	Average	It should be more developed	It needs totality developed	Total
Stakeholders	Students	Count	32	0	10	8	50
		% of Total	21.3%	.0%	6.7%	5.3%	33.3%
	Experts	Count	28	0	5	17	50
		% of Total	18.7%	.0%	3.3%	11.3%	33.3%
	Farmers	Count	48	1	0	1	50
		% of Total	32.0%	.7%	.0%	.7%	33.3%
Total		Count	108	1	15	26	150
		% of Total	72.0%	.7%	10.0%	17.3%	100.0%

Still extensive numbers of participants more than three quarter do not know about whether e-government services developed enough or not, in respect of each stakeholder, that is confirmed in the above table and chart. What is more, almost the entire farmer stakeholder does not know about e-government services development as they do not know what is it or what kind of services it should offers.

Q15. **Does the usage of e-government services appropriate with lifestyle)** (See Table 19)

Table 19: does the usage of e-government services appropriate with lifestyle

Stakeholders * usage of e-government services appropriate with life style

			usage of e-government services appropriate with life style				
			Yes	No	Average	I do not know	Total
Stakeholders	Students	Count	43	0	7	0	50
		% of Total	28.7%	.0%	4.7%	.0%	33.3%
	Experts	Count	27	0	23	0	50
		% of Total	18.0%	.0%	15.3%	.0%	33.3%
	Farmers	Count	2	21	6	21	50
		% of Total	1.3%	14.0%	4.0%	14.0%	33.3%
Total		Count	72	21	36	21	150
		% of Total	48.0%	14.0%	24.0%	14.0%	100.0%

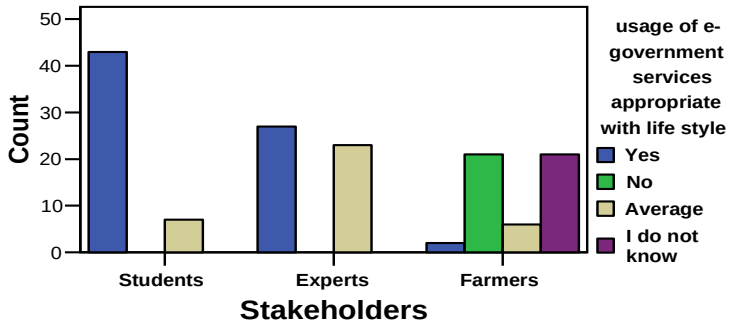

Chart 12: does the usage of e-government services appropriate with lifestyle

The above table and chart exhibits that, a reasonable percentage of participants do agree that, e-government services appropriate with their lifestyle in respect of student and experts stakeholders. In contrast, the farmer stakeholder are approximately all of them do not agree on that or they do not know.

Q16. Does the advantage of using the e-government services justify its expenses? (See Table 20)

Table 20: does the advantage of using the e-government justify its expenses

Stakeholders * Does the advantage of using e-government justify its expenses

			Does the advantage of using e-government justify its expenses				
			Suitable advantages	Non advantages	Average advantages	I do not know	Total
Stakeholders	Students	Count	11	9	6	24	50
		% of Total	7.3%	6.0%	4.0%	16.0%	33.3%
	Experts	Count	25	12	13	0	50
		% of Total	16.7%	8.0%	8.7%	.0%	33.3%
	Farmers	Count	0	0	3	47	50
		% of Total	.0%	.0%	2.0%	31.3%	33.3%
Total		Count	36	21	22	71	150
		% of Total	24.0%	14.0%	14.7%	47.3%	100.0%

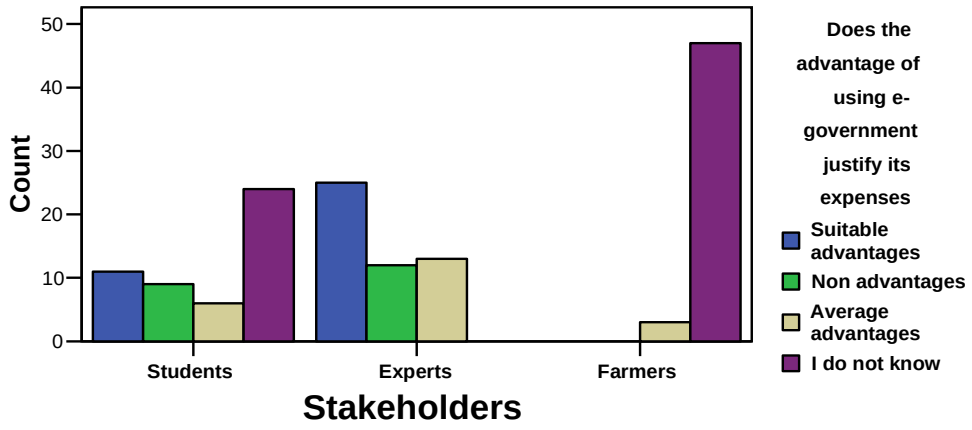

Chart 13: does the advantage of using the e-government justify its expenses

Nearly the entire farmer and half of the student stakeholders do not know, also most of the participants who said there is no advantage, are from same stakeholders, (see table and chart above). Additionally, the expenses of using Internet services in general and e-government website in particular do not justifying its expenses. This demonstrates how high cost of Internet services hinders the public and forms a barrier for the public to interact with e-government website and discourage the use of its services.

Q17. Current e-government introduces full necessity service (See Table 21)

Table 21: Does current e-government introduce full necessity service

Stakeholders * Does current e-government introduce full necessity service

			Does current e-government introduce full necessity service				
			Yes	No	Average of services	I do not Know	Total
Stakeholders	Students	Count	1	34	0	15	50
		% of Total	.7%	22.7%	.0%	10.0%	33.3%
	Experts	Count	3	16	13	18	50
		% of Total	2.0%	10.7%	8.7%	12.0%	33.3%
	Farmers	Count	1	1	0	48	50
		% of Total	.7%	.7%	.0%	32.0%	33.3%
Total		Count	5	51	13	81	150
		% of Total	3.3%	34.0%	8.7%	54.0%	100.0%

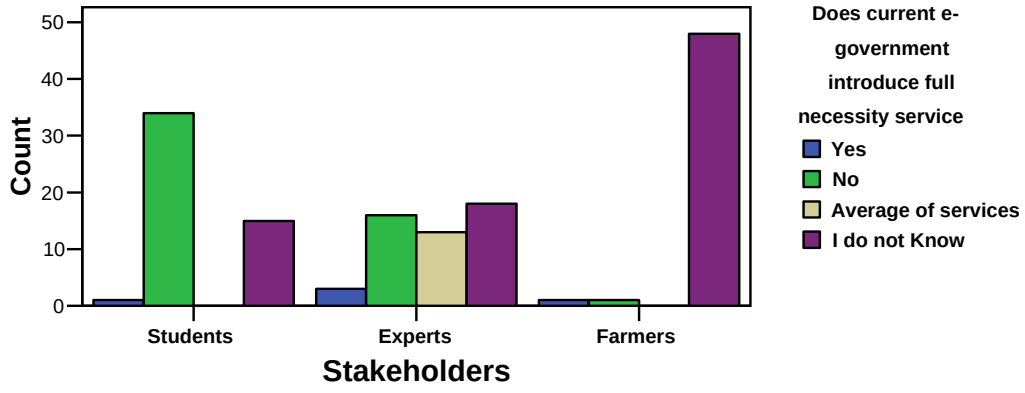

Chart 14: does current e-government introduce full necessity service

Only thirteen percent of participants agree that there is a necessity services introduced by e-government. While, a significant number of the participants think that the e-government does not introduce a necessity service via its website. Again, more than half of participants do not know.

APPENDIX C: Types of, variables, description, categories, test and data

1.1 Types of Variables

The required method of analysis depends on the nature of the data. In order to understand the most effective technique of analysis, the researcher must correctly identify the type of variables and data in the study. It should be noted that there are numerous different types of data and variables. These variables will be described in the following sections in order to justify the method of analysis chosen for this study.

Quantitative variables come in two forms. The first form is discrete, which deals with whole numbers. The second form in continuous, which deal with decimal numbers. Figure 7 demonstrates the various classifications of variables.

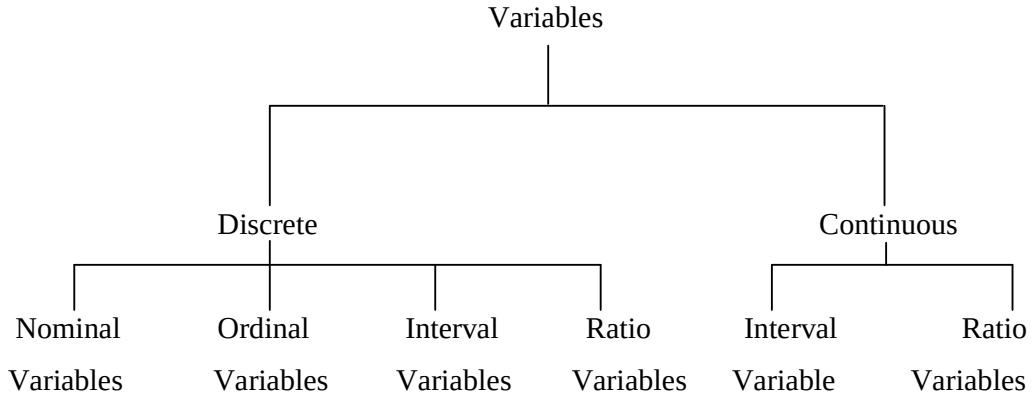

Figure 1. Classification of variables, (Creswell 1998).

Nominal data is non-numeric – such as gender or eye colour, for example, this data can be assigned a numeric code in order to differentiate (e.g., 1 = blue eyes, 2 = green eyes, 3 = brown eyes). Ordinal data refers to ranking. Interval data refers to the value of the difference between data points. Interval data has both a zero point and standardized intervals of measurement (e.g., income, price, height).

1.2 Data Types

The data derived for this study came from questionnaires and interviews. Therefore, it is important to discuss the nature of data and major data types. Data from surveys, questionnaires, and observation can be qualitative or quantitative, and are usually analysed using statistical analysis. The breakdown of data types can be found in Figure 8.

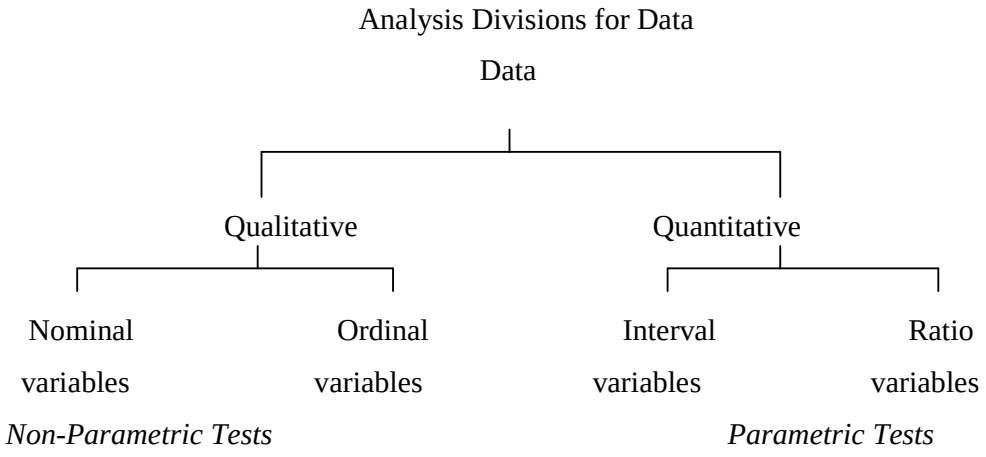

Figure2. Classification of data

Table 17 demonstrates all the categories of data derived in this study, (Creswell 1998).

Variables, Categories, Type of variable, Type of Test, and Type of Data

The Variables	Description of the variables	Categories	Type of Variable	Type of Test	Type of Data
Gender	Gender	1-male, 2-female	NOMINAL	Non-parametric tests	QUALITATIVE
Cities	Cities	1-Garyan, 2-benghazi …etc	NOMINAL	Non-parametric tests	QUALITATIVE
Age	Age	1-less than 18 2-19-25 years 3-26-25 years Etc	**ORDINAL**	Non-parametric tests	QUALITATIVE
Education	Education	1-not educated 2-primary school 3-secondary school Etc	**ORDINAL**	Non-parametric tests	QUALITATIVE
Occupation	Occupation	1-student 2- engineers 3-farmer	NOMINAL	Non-parametric tests	QUALITATIVE
Q1 True	English Skills	1-Yes 2-No	**ORDINAL**	**Parametric tests**	QUALITATIVE
Q2	Computer Skills	0-non user 1-bigneer 2-basic 3-average 4-more than average	**ORDINAL**	Non-parametric tests	QUALITATIVE
Q3 True C	Where usually using Internet	0-non user 1-at home 2-at work 3-at school 4-more than one choice	NOMINAL	Non-parametric tests	QUALITATIVE
Q4 True C	Period since first use of the Internet	1-6 to 10 year 4 2-2 to 5 year 3 3-less than 2 Y 2 4-non user 1 5-missing value 99	**ORDINAL**	Non-parametric tests	QUALITATIVE

Q5 True	Frequency of using Internet	0-none 5 Daily 1 1-once a month 4 2-once a week 3 3- 3 to 4 times a week 2	**ORDINAL**	Non-parametric tests	QUALITATIVE
Q6 True C	Period of average use of the Internet	0-none 1 1-more than 10 h 5 2-6 to 10 hours 4 3-2 to 5 hours 3 4-less than 2 h 2	**ORDINAL**	Non-parametric tests	QUALITATIVE
Q7 True C	Purposes of surfing the Internet	0-no activity 1-search for information 2-education purpose 3-e-banking 4- e-commerce 6-someyhing else 7-more than one	NOMINAL	Non-parametric tests	QUALITATIVE
Q8	compatibility (Internet) with life style	1- I don't know 1 2-not compatible 2 3-less than average 3 4-average 4 5-more than average 5 6-very compatible 6	**ORDINAL**	Non-parametric tests	QUALITATIVE
Q9	cost as a barrier using internet	1-not barrier me 1 2-little 2 3-average 3 4-more barriers 4 5-very barrier 5	**ORDINAL**	Non-parametric tests	QUALITATIVE
Q10 True	awareness of e-government services	1-yes 2-no	NOMINAL	Non-parametric tests	QUALITATIVE
Q11 True	visiting e-government website	1-yes 2-no	NOMINAL	Non-parametric tests	QUALITATIVE
Q12	readiness for using e-Gov web sites if you got fitting courses	1-not ready 2-little 3-average 4-almost ready 5-ready to use	**ORDINAL**	Non-parametric tests	QUALITATIVE
Q13 True C	the necessity of e-government services, (using tradition way or e-way)	1- I don't know 1 2-not significant 2 2-significant 3 3-average 4	**ORDINAL**	Non-parametric tests	QUALITATIVE
Q14	e-government services developed enough	0-I don't know 1 1-it need a little 2 2-it need little more 3 3-avergae 4 4-it need be more develop 5 5-it need totally developed 6	**ORDINAL**	Non-parametric tests	QUALITATIVE
Q15 True T	usage of e-government services appropriate with life style	1-yes 2-no 3-average 4-I don't know	NOMINAL	Non-parametric tests	QUALITATIVE
Q16	Does the advantage of using e-government justify its expenses	1- I don't know 1 2- non advent 2 3-suitable advantage 3 4-average advent 4	**ORDINAL**	Non-parametric tests	QUALITATIVE
Q17 True C	Does current e-government introduce full necessity service	1-yes 2-no 3-averg service 4-I don't know	NOMINAL	Non-parametric tests	QUALITATIVE

As we see in above table variables are all non-parametric which is meaning the r = correlation coefficient will be measure in different equation because it is not about qualitative

test. NOT like parametric test where data test for quantity and r =correlation coefficient will be measure in the normal equation or r (Bland and Altman 1986). Further, the table demonstrates the type of test conducted for each variable. The types of tests chosen were *t*-test and Chi square (Maykut and Morehouse 1994), because these tests can be done on both parametric and non-parametric variables. Qualitative data is suited to non-parametric tests (Chi square), and quantitative data lends itself to parametric tests (*t*-tests and ANOVA) (Maykut and Morehouse 1994).

1.3 Types of Statistics

Descriptive statistics and inferential statistics are the two main areas of statistical analysis (Barber and Thompson 1998). The two major types of inferential statistics are parametric statistics and non-parametric statistics. This research offers data that is qualitative, which consequently suggests using an inferential non-parametric test.

1.4 Univariate and Multivariate Techniques

The entire range of statistical techniques used to analyse questionnaires can be classified into two areas (Hill & Lewichi, 2006):

- Univariant Techniques - for when there is a single measurement of each of the objects from a sample and each variable is analysed in isolation (Hill & Lewichi, 2006). These can be further classified into nonparametric and parametric (univariate techniques will be used in this research).
- Multivariate Techniques - for when there are two or more measurements of each observation and the variables are to be analysed simultaneously (Multivariate techniques will not be used in this research) (Lee and Wang 2003).

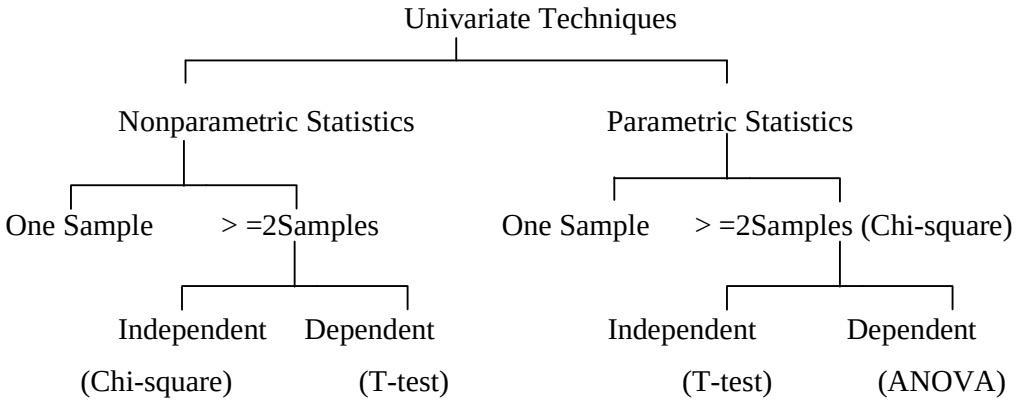

Figure 3. Diagram of statistical techniques, (Creswell 1998).

Inferential statistics are the main type of analytical technique used for this research study.

1.5 Correlation Coefficient

For the purposes of analysis, the dependent variable in this study will be the adoption of e-government services. The independent variables include technology experience, Internet availability and accessibility, cost of technology, training, relative advantage, and more. The relationship between these variables and their effect on the rate of adoption of the new e-government implementation shall be measured using Spearman's rank correlation.

The goal of correlation analysis is to find out whether two variables are related. If the variables are related, Spearman's Rank Correlation allows researchers to determine the degree of relation (Chen, Roll et al. 1986). Spearman's Rank Correlation is a method to describe the behaviour of dependent variables – in this case, the adoption of e-government services–using multiple predictors or independent variables – in this case, the numerous variables mentioned in the previous paragraph. Ultimately, Spearman's Rank Correlation will demonstrate the effect of the independent variables upon the rate of adoption of e-government services in Libya.

As an inferential statistic which is refer to enable researcher to decide is one group different from another (Brown 1991), the correlation coefficient have been used to make a decision about whether there is a statistically significant relationship between the different obstacles and variables (Hill & Lewichi, 2006) listed before and the e-government services initiative in Libya. The Statistical Package for Social Sciences **(SPSS)** statistical application programme has been used in the derivation of the Spearman's Rank Correlation.

Spearman's Rank Correlation is used to solve important research problems, particularly in business. Correlation analysis is by far the most widely used and flexible dependence technique, applicable in every side of business decision-making, (Hair, Anderson et al., 1998). Correlation models are used to study how consumers make decisions or form impressions and attitudes, thus this model could be used to determine factors affecting the use of technologies. Correlation model is a general statistical technique used to analyze the relationship between a single dependent variable and several independent variables.

1.6 Correlation Analysis

Correlations are used to examine relationships between two or more variables. As with other types of statistical tests (Hill & Lewichi, 2006), i.e., how closely they match each other in terms of their individual mathematical change. The question addressed is: if one variable (X) moves or changes in a certain direction does the second variable (Y) also move or change in a similar or complementary direction? (Hammersley 1996)**.** And as the data is nonparametric then the Spearman Rank Order correlation is the test to use. And the appropriate significance level that the relationship being examined is two tailed. In the context of correlations two tailed relationships refer to the predicted relationship is in two directions are possible (Meng, Rosenthal et al. 1992). Correlation coefficient figures vary from –1 to 1 and the larger the value, the stronger the correlation. Correlation coefficients are being tested for significance. So, a positive value (e.g., .10, .40, .80) reflects a direct associations between the two variables and a negative value (e.g., –.20, –.40, –.80) reflects a negative or inverse relationship (Meng, Rosenthal et al. 1992). The strength of association is indicated by the absolute value of the correlations; for example, the values –.80 and .80 represent equally strong relationships. Zero is the weakest correlation, and 1 (or –1) the strongest. As a rule of thumb, A value of 0.00 represents a lack of correlation, correlations between .01 and. 30 (absolute value) are considered weak; those between .31 and .60 (absolute value) are considered moderate, and those greater than .60 (absolute value) are considered strong.

There are correlations that are applied to two ordinal kinds of variables (Meng, Rosenthal et al. 1992). These are typically nonparametric correlations (Hill & Lewichi, 2006). These correlation coefficients are distribution free and are usually applied to the ranks of the two variables. For example the Spearman ranks correlation. It measures monotonicity: Whether one variables changes in the same direction as the other variable, when a change from one case to the next is considered. If both variables change in the same direction, a similarity is found (Meng, Rosenthal et al. 1992). If one variable changes in one direction while the other variable changes in the opposite direction, discordance is found. The total number of concordances and the total number of discordances for all pairs of observations are counted. We can quantify the degree of correlation by specifying the correlation coefficient (R Hill & Lewichi, 2006).

Data Description

Secondary sources of data will be mainly provided from books, national and international journal articles, conference papers, government reports, and magazines. During the course of the research, a total review of all studies that were conducted about Libya's level of Information and Communication Technology (ICT) investment and technological adoption levels was performed. Other studies, such as those conducted by the Libyan government web site team and the Internet Association of Libya, have been also considered and studied.

From the Theoretical Model covered in literature (See Chapter 2 for detail), five main challenges for e-Government services technology adoption emerged; these are identified in Table 4. In addition for short term implementation plan seven essential transformation processes appeared (See Figure 1) and stakeholder and network theory (See Figure, 2) to ensure the smooth transformation to e-Government services followed by a discussion of each of those challenges (for more details see sections 2.5, 2.7 and 2.8). Researchers have contended that there is some order to those challenges in ensuring there is successful use and adoption of the e-Government services technologies.

Primary data

Primary data sources have been collected though surveys and interviews. The surveys have been conducted to measure the main five challenges (Initial Module) people awareness (which is the skills of computers and internet usage and knowledge about government services), to reach the people participation that will lead to the successful implementation of e-Government services. The different obstacles, problems, and challenges have been identified and different options for handling these issues will be determined.

1.2 Methods and Choice of Analysis

1.2.1 The surveys

The Internet presents a unique problem for surveying. The main issue in conducting a survey over the Internet is the methodology used to collect responses from individual internet users regarding to (TM or Initial Module) (See section 6.2). Since there is no central registry of all Internet users in Libya, completing a census of Internet users is neither practical nor financially feasible. Therefore, the researcher made a special arrangement with the Libyan

government's web site team, which hosted my online questionnaire on the Libyan e-Government web site main page and invited contributions from visitors to the web site.

The paper-based survey was considered to measure perceptions about e-Government services of non-internet users in Libya which includes students, engineers and farmers. The questionnaire was distributed through Libyan postgraduate students (For details see Section 6.3).

From the survey, it is expected that the four stakeholder groups of student union, farmer union and engineering union and participants wider internet users would yield different data. It is expected that student union and internet users would have the highest level of awareness. Because students are learning new advanced knowledge and skills in technology, they have real reasons to improve their live, by how much knowledge and skills they got and regarding to their age they are in suitable age full energy to learn and skilled them self's; Engineering already graduate engaged with their social, career life still and their age's ability will not support as students ability; Engineering staff union would be in the middle with some members keeping up with technology and some not depending on their working life motivation and environments. farmers are not familiar with new system and curriculum education anymore and away from technologies usage, since technologies such as e-Government services have emerging in last decade, their ability considerations and mode to learn new technologies are not supporting any more. See Table 18 for hypothesis ranking for the three groups.

Table 18 Ranking of Libyan Stakeholder on e-Government Services and Usage

Group Stakeholders			
	Student	Engineering	Farmers
Education	@@@@@	@@@	@
Motivation	@@@@@	@@@@	@
Willing/ability	@@@@@	@@@	@

Table 3 Shown hypothesis of Stakeholder Groups

@@@@@	Very high
@@@	Middle
@	Very low

The In-depth interviews focused on the delivery of e-Government services (six interviews) (See Table 16 section 6.4), a vaccination case study (9 interviews) (See Table 13 and Section 5.4.2), were conducted to determine the level of technology used and to measure the awareness of managers, employees and some participations of new technologies importance. Some discussions had holed with the general managers' senior people, IT department managers and are there different obstacles, barriers and challenges that will face implementation of new e-Government services with (TM). The results from these data collection to prove and improved the factors in (TM). Interviews investigations were concluded to obtain the opinions of Libyan key players to the e-Government services implementation.

1.3 Case Studies

The researcher implemented special techniques such as field visits for two case studies and e-mails and Mobile phone for the third case study (See chapter 5). During data collection in Libya, it was found those two case studies, First National Centre of Fighting Contagious and Threatened Disease NCFCTD using SMS messaging to inform families about vaccination, (See Section 5.4). Second is Alhraba Village "local Internet access initiative" (See Section 5.5). From secondary data in "Aljazeera News" was found the third case study which is Benghazi Blind and Disabled Association (See Section 5.6) which were very interesting case studies. North East of Libya regions high level of Knowledge and skills on usage of computers and internet, and Misratah where is very high income and low knowledge and technologies skills of participations in online survey.

Some sessions had held by the researcher to highlight the importance of e-Government services adoption and it's negative and positive that will effect the successful implementation of e-Government services on confidence in both quality of the services and the successful implementation, and how smooth will be the move to the new e-Government services initiative. These visits aims also to determining the level of required needs and prerequisite investment inside the different government agenesis, different regions in Libya and local champions such as case studies 1 and 2, (See Sections 2.5, 2.7 and 2.8); which might to be a major investment required to reengineer the business process, that could delay or support the successful implementation of e-Government services.

1.4 The Focus of the Research

E-Government services are too broad to study exhaustively across all its dimensions. Existing studies concentrate on the awareness of the adoption of e-Government services, knowledge about e-Government services and skills usage of computers and internet.

(Figures below) complements these studies by addressing the people awareness side of e-Government services, usage, perceptions and barriers that potential impact adoption of successful implementation of e-Government services in Libya. For this purpose a gap analyses was made of the policy needs for information and available indicators. The research measured acceptance, adoption of e-Government services by the preference of citizens, business and decision makers and constitute a novel and necessary that indicate successful implementation.

Some existing studies in developed countries have looked at or conventional means of transacting with government, but they have not sought to elucidate what drives citizens toward or away from e-Government services (See Table 4). Studies of the business, citizens and decision maker's preferences for e-Government services or existing means of transaction are non-existent in developing countries. For this reason, this research focussed on factors that either facilitate or impede the successful implementation of e-Government services based on user awareness (knowledge and usage of computers and internet) (See Sections, 2.5, 2.7 and 2.8).

The survey and qualitative study using interviews and panel discussions looked at citizen, decision makers and business knowledge and skills of computers and internet toward e-Government services.

Two complementary surveys were conducted in this project, The investigation, consisting of a 6 months field study ending in November 2006, involved the distribution of a questionnaire survey to four stakeholder groups (150 participants farmers, students/academics, engineers and a further 396 responses from an online survey (online Questionnaire for the internet users of General Libya Population), two panel sessions from stakeholder groups (managers involved in different government agencies) and four interviews

(senior managers responsible for e-Government services delivery, academics and agents). Most of the organisation and set-up of the research activity was through personal contact through Libyan government departments.

NOTE that the following coloured paragraphs are repeated at correction 2 Methodology:

Regarding the e-Government services questions, the purpose was to query citizens, businesses and decision makers about their views of e-Government services compared to traditional modes of usage and interacting with government.

While the survey and qualitative study sought to identify whether Libyan stakeholders, citizens, business and decision makers aware of implementing e-Government services are suitable for them from side of knowledge such as information and services sought, cost of internet and technologies devices, challenges of technologies infrastructures, and risk of provide privacy information online; skills of technologies, such as experience of usage computers and internet, the current survey and qualitative study provides a useful supplement to it by considering respondents' views of e-Government services.

The survey and qualitative study focused on Government to Citizens (GtoC) and Government to business (GtoB) and Government to Government (GtoG) from the perspective of citizens, businesses and Government staff. It is necessary to get a complete picture to ensure a successful implement e-Government services. However, this was not impossible in the current project.

The survey of citizens examined respondents' preferences of their, knowledge and skills to toward e-Government services; Similarity with businesses and government staff. Additional qualitative study was carried out by combining knowledge gained from the SMS messages delivered by Mobil phone Company (Almadar) to the publicly confirm them about vaccination to children under 16 years old when and where it will take place. The survey carried out regarding the level of sophistication achieved by the contagious threatened illness centred at the Ministry of healthcare in Libya. The aim of the interviews and panel discussions was to see if the same issues emerged as in an e-Government services project implementation (TM), and identified which key elements that lead to deliver services through SMS messages, address centred team's practical experiences how the idea emerging, highlighting any problems barriers, obstacles, faced the implementation and/or acceptance

from people (parents and Ministry staff) and represent distinct stages of an e-Government services project implementation.

Variables Likely to Affect the Implementation of e-Government Services in Libya

The implementation of the e-Government services in Libya might be faced by a set of barriers, challenges and problems which could be classified into two main categories. The first category will be arising from the people who will use the system and the government and business officials who should support the change process. These challenges could be grouped under lack of Awareness, Trust, and Cultural Barriers. The other set of challenges will be mainly due to the lack of resources and required infrastructure, such as the required technological base, legal infrastructure, security infrastructure, etc.

1.3.1 Awareness

In developing countries like Libya, lack of awareness is considered to be one of the crucial barriers to introduce, adopt and implement of new technologies.

Here the researcher defining awareness as: *people knowledge and skills of technology* should be experimented before establish implementing an e-Government services project.

The following questions will be used to measure the people awareness of using the computer, Internet and government online services. People awareness of technology was previously defined as the degree to which innovation may be experimented with before its adoption.

The following questions will be used to measure the four Libyan stakeholders; (online and paper based survey)' awareness of new technologies.

1.4 Questions on Personal Data

Questions from the survey will be used to identify the respondents' age, gender, location, occupation, qualification.

Age was used to identify which generation are aware (have knowledge and experience of new technology) and will enable us to asked questions such as why and how to improve other generations.

Gender was used to enable us get answering like (X) are aware and (Y) not, that will lead us to ask question why? How improve (Y).

Location is used to enable us to know location of aware people, familiarity and infrastructure of technology.

Occupation is used to show us which stakeholder more aware and where are the weakness and strengths points in Libyan staff that will enable us to patch up and/or improve our organizations.

Qualification is used to show us is the current education system suitable and appropriate for current age or needs to improved and patch up.

These getting potential answers will lead to make the political will, decision makers and the team which will implement e-Gov services project more aware about how, when and where to establish this project and how to patch up the weakness and improve the strength points.

1. **What is your age?**

___Less than 18 ___19 to 25 ___26 to 35 ___36 to 45 ___46 to 55 ___56 to 65 ___over 66

2. **What is your gender?**

___Male ___female

3. **Your city ____**

4. **Occupation:** student, teacher, programmer, vendor, worker, police man, farmer, engineer, lecture, doctor, lawyer, unemployment, something else.

5. **What is your qualification education?**

Secondary school technical education high institute degree MSc PhD

1.4.1 Questions about Computer, Internet and e-Government Services Usage

Several questions have been used to determine the level of experience with the usage of Computer, internet and cost barriers using technologies, readiness to use e-Government services websites if getting training courses and knowledge on e-Government services. These questions are identified below used Correlation test for questions number 2, 8,9,12 and 14. The basic purpose behind correlation is to find out if two variables are related to one another. If the variables are related, Correlation then allows the use of the relationship in the prediction of one variable given a score on the other variable. See Table 4

2. How do describe yourself as usage of computer?

1 2 3 4 5,

8. To what extent do you see using internet is compatible with your lifestyle? Number (1) it is not (5) very compatible (6) don't know.

1 2 3 4 5 6 i don't know

9. Do you think cost usage of internet Barrier you to use it?

Number (1) it is not (5) very Barrier

1 2 3 4 5

12. To what extent you consider yourself ready to using e-Government websites if you got training course and everything available?

1 2 3 4 5

14. Are the e-Government services websites developed enough?

0 I don't know, 5 it needs fully developed.

1 2 3 4 5

Several questions have been used to determine the ability to browser on the World Wide Web and level of people's knowledge and skills about e-Gov services. These questions are identified below used T-test "statistical techniques" to analysis them, these questions are 1, 10, 11 and 15; Reason behind using T-test is often the most appropriate statistical test to

use when you wish to compare a continuous outcome variable in two independent groups. It involves comparing the mean outcome in each of the groups. See Table 4

1. Do you have problem in dealing with English Language?

Yes No

10. Do you consider yourself aware of what e-Government services is all about?

Yes No

11. Have you been visited e-Government services website/s?

Yes No

15. Do you think usage of e-Government services websites appropriate with your lifestyle?

Yes No

Other comments……

Several questions have been used to determine the level of people about usage of internet, Internet availability, accessibility, familiarity and experience of using internet. These questions are identified below used Chi-Square test for questions number 3, 4, 5, 6, 7, 13, 16 and 17; researcher used Chi-Squire cause to investigate whether distributions of categorical variables differ from one another. Basically categorical variable yield data in the categories and numerical variables yield data in numerical form. Responses to such questions as "where usually are using a computer?" or how average are using internet?" are categorical because they yield data such as "biology".

3. Where usually are using a computer?

At work At home at School coffee net ells where,

4. How long have you been using internet?

Less than2 years 2 to 5 years 6 to 10 years more than 10years

5. How average are using internet?

Daily 3 to 4 times a week once a week once a month

6. How long time are you spending on internet each?

Less than 2 hours a week 2 to 5 a week 6 to 10 a week more than 10 hours a week

7. What sort of activities you usually do when you browser on the net?

Search for information, searching for education purpose, shopping purpose, e-commerce purpose, e-banking, check e-mail, checking e-Government website, something else.

13. From your point of view what are the necessity of e-Government services websites and do you prefer to finish your producers by traditional way then the e-way?

Significant not significant

Other comments……here some of participants give half answers.

16. To what extent do you believe advantages you get from usage and browsers of e-Government services websites justify your expenses and its cost?

Suitable advantages non advantages

Other comments……..

17. Do current e-Government services websites introduce full necessity service for you?

Yes No

Other comments……..

Copy of the Online Questionnaire:

استبيان عن عمل المواقع الإلكترونية للجان الشعبية العامة

الإدارة الإلكترونية

الغرض من هذا الاستبيان هو تحديد أهم العوامل التي تؤثر فى تبنى وتطبيق تقنيات العمل الإلكترونى فى اللجنة الشعبية العامة فى ليبيا. فإذا كان لديك بعض الوقت، نرجو التكرم بتعبئة الاستبيان التالى.

مساهمتك مهمة جدا لهذا العمل ولا يترتب عليها أى مسئولية، شكرا جزيلا مقدماً، على تجاوبك معنا.

ملاحظة هامة: هذا الاستبيان من إعداد أحد الشباب الليبيين، الذي يسعى لنيل درجة الإجازة الدقيقة (الدكتوراة) في مجال العمل الإلكتروني، والغرض من نشر هذا الاستبيان هو استقراء واستطلاع رأي اكبر شريحة ممكنة من مستخدمي الانترنت الليبين في ليبيا وخارجها و لا علاقة للموقع بمحتوى الاستبيان من قريب أو بعيد.

البيانات الشخصية		
الاسم :		
الجنس :	(اختر الإجابة)	
العمر :	(اختر الإجابة)	
المدينة :		
المستوى التعليمي :	(اختر الإجابة)	
المهنة :	(اختر الإجابة)	
البريد الإلكتروني: * (ضروري)		
هل تواجهك صعوبات (لغوية) أثناء تصفحك مواقع باللغة الانجليزية :	نعم	لا
مهارات التعامل مع الحاسوب و الانترنت		
ما هو مستوى خبرتك في التعامل مع الحاسوب؟ (رقم "1" مبتدئ "5" متقدم)	1 2 3 4 5	
أين تستخدم جهاز الحاسوب عادة؟	العمل المنزل المدرسة مقهى الانترنت مكان اخر	
منذ متى تستخدم الانترنت؟	(اختر الإجابة)	
ما هو معدل دخولك للانترنت؟	(اختر الإجابة)	
كم من الوقت تقضيه على الانترنت في كل مرة؟	(اختر الإجابة)	

ما هي نوع النشاطات التي تقوم بها اثناء تصفحك شبكة المعلومات؟	البحث عن معلومات ☐ تصفح للغرض التعليمي ☐ التسوق على الشبكة ☐ تصفح للغرض التجاري ☐ الاطلاع على البريد الإلكتروني ☐ تعامل مصرفي ☐ تصفح مواقع الإدارة الإلكترونية ☐ اخرى ☐
هل برايك استخدامك لخدمات شبكة المعلومات يتناسب مع احتياجاتك اليومية؟ (رقم "1" غير مناسبة "5" مناسبة جداً)	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
هل تعتقد بأن تكلفة خدمة الانترنت تحد من استعمالك لهذه الشبكة؟ (1 غير مؤثر 5 مؤثر جداً)	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
مدى ادراكك لأهمية الإدارة الالكترونية	
هل سبق وأن سمعت بمفهوم الإدارة الإلكترونية؟	نعم ☐ لا ☐
هل سبق وان زرت موقعاً لإدارة إلكترونية قبل الان؟	نعم ☐ لا ☐
إلى اي مدى انت على استعداد لإستخدام المواقع الإلكترونية للجان الشعبية العامة؟	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
برايك ما الجدوى من وراء المواقع الإلكترونية للجان الشعبية العامة؟	مجدية ☐ غير مجدية ☐
هل تحتاج المواقع الإلكترونية للجان الشعبية العامة إلي تطوير؟ (1 لا تحتاج 5 تطوير كلي)	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
هل ترى أن استعمال خدمات المواقع الإلكترونية للجان الشعبية العامة	نعم ☐ لا ☐

يتماشى مع نظام حياتك؟

الفائدة أكبر التكلفة أكبر

إلي اي درجة ترى أن الفوائدالتي تعود عليك من استخدام هذه المواقع تبرر قيمة تكلفة تصفحك لها أو ما ينفق عليها من اموال؟

نعم لا

هل تقدم المواقع الإلكترونية للجان الشعبية العامة كافة الخدمات المطلوبة لك؟

امسح النموذج ارسل النموذج

شكرا جزيلاً على تعاونكم معنا

ABENDIX D: Questions for Interviews Questionnaire

Interviewees Questions:

1. Do you have skills in English language and dealing with English web pages?
2. What is your education qualification?
3. Is there any problem that barriers you to use internet and computer?
4. How long have you been using internet?
5. Do you think accesses to internet/computer are available everywhere in Libya?
6. How much money access to internet costing Libyan people?
7. What do you think of e-government services project implementation in Libya with current infrastructure of technologies?
8. What do you think that Libya needed to achieve the success of e-government services project?
9. Do you think the current cost is barrier Libyan people of using internet and computer?
10. Are you ready to do support to the e-government services project?
11. Do you think e-government services will provide advantage or disadvantage to Libyan organizations and its people?
12. Do you think that Libyan people and government staff are ready to use and implement e-government services?
13. Do you feel that usage of computer and the internet becoming part of your familiarity live?
14. What kind of resources and/or factors that do you think Libya needed for e-government services project?